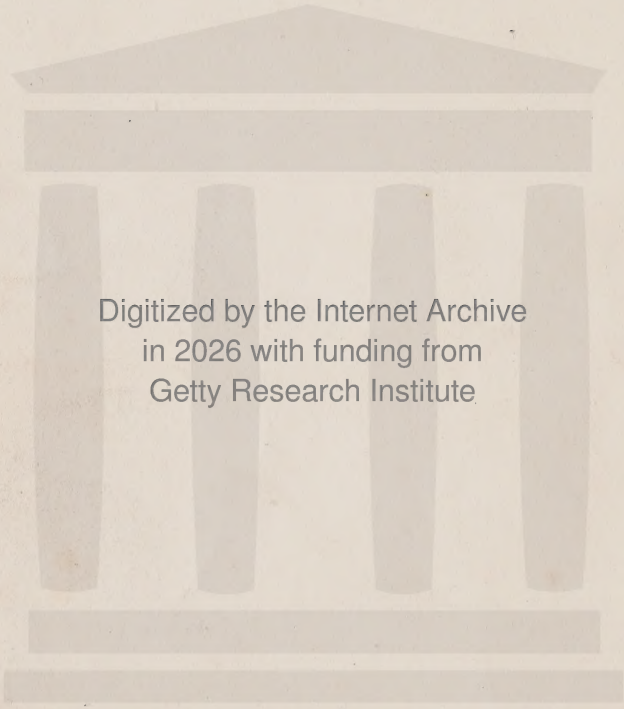

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THE

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A MONTHLY MAGAZINE OF

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THE

POLYTECHNIC JOURNAL:

A MAGAZINE OF ART AND SCIENCE.

THE ROYAL ACADEMY.

TO THE EDITOR OF THE 'POLYTECHNIC JOURNAL.'

Sir,—I hail with much satisfaction the announcement of a publication that proposes to unite science and the fine arts. If such a course is steadily and efficiently pursued in the 'Polytechnic,' it will give to our artists, beyond the material and jargon of technical art, general principles of natural and moral philosophy; and to men of science, in addition to their own deductions of her wonders, the ample field of nature's brighter charms; it will also raise in them a due respect for the artist who can fix her transient beauties. Mutual assistance and mutual esteem have not been sufficiently cultivated by men of talent in branches of knowledge so various, yet founded on the same principles of a divine creation. The study of truth and of beauty—of moral as well as intellectual excellence—and the contemplation of whatever nature and art can furnish, would lead to national as well as individual improvement.

But, sir, this happy result cannot be secured, unless that bitterness of spirit, that perversion of facts, and those contracted perceptions too often conspicuous in periodicals, are carefully avoided. The present moment is favourable for the attempt. It has been discovered that the people of this country have not possessed sufficient opportunities of cultivating their taste. The Parliamentary Committee of Inquiry in 1835 and 1836 procured much valuable evidence on the subject, comprising various and in some points even conflicting opinions. From that period a general interest has been excited throughout the kingdom; schools for the cultivation of art have been attempted; exhibitions of various kinds and degrees of interest have been opened to the people; and although in some cases the attempts may have been rather hasty than judicious, their effects generally have been most gratifying. In addition to the National Gallery, where nearly 398,000 persons were admitted last year without charge or restriction, the armouries of the Tower have been visited by not less than 9,000 per month. That splendid and highly

instructive collection of historical testimonies has not only become a source of pleasure and reflection to increased multitudes, but the bickerings formerly so frequent before the admission was reduced from two shillings to sixpence, are at an end; the minds of the visitors are thus better prepared to receive information, which, on the other hand, is imparted more cheerfully and to the purpose. At Hampton Court, instead of the mulcted visitors who used to be dragged through the apartments as though their very breath was attended with mischief, crowds are now allowed to loiter at pleasure through the open rooms without charge or hindrance. Formerly, by the time the visitors were conducted to the gallery of the Cartoons, the only thought was as to the fee to be paid at the door; there was little attention paid to the expressive representation of Christian influence; money, and not benevolence, absorbed all thoughts. The abolition of that impost, with the attendant suspicion and discontent, and the separation of money considerations from the admiration of art, were most essential to our progress in taste. The example of the Sovereign and of Parliament has been liberally followed by many societies. The establishment of a second Gallery of Practical Science (the Polytechnic Institution, Regent street), and another exhibition for works of art in the metropolis, is not more remarkable than the liberality displayed at Newcastle-on-Tyne, at Liverpool, Manchester, Sheffield, Derby, Macclesfield, the Potteries, Lancaster, Edinburgh, and other towns, in which opportunities have been afforded to the public, as honourable to the promoters as advantageous to the community.

But, in the midst of so much good, the zeal of those who have exerted themselves to extend civilization and rational enjoyment has been misunderstood by some persons, who imagine they perceive under the guise of public utility a lurking intention to injure particular establishments, and who by their violent expression of opinions, or—what is more unjustifiable—by mis-statement of facts, endeavour to mislead. A most glaring instance of this sort has occurred in a monthly journal in an article on the late debate in the House of Commons relative to certain returns from the Royal Academy. The following explanation will show how far it is possible for party spirit to interfere with subjects where candour and calm judgment are so essential. The writer in question has given the whole of the petition of the members of the Royal Academy, but not one word of those which were presented from the other side in favour of the returns. He sets forth the most astringent parts of Sir Robert Peel's speech, but omits every word of Mr Hume's reply. He states the number of artists who petitioned in favour of the Academy's claim to secresy and irresponsibility to be seventy, whilst it is really sixty-two; and he gives the number of those in opposition as eight, whereas the actual number is fourteen; and of these five, as the officers of the Society of British Artists, represent five times as many.

Mr Hume stated that in less than a month *eighteen thousand*

persons had visited Hampton Court; the same writer reduces them to *eight thousand* in a month. He refers to the salary of the Secretary of the Academy, as 140*l.* a-year, omitting perquisites, which raise it to 350*l.*, besides 100*l.* a-year to his assistant, and then argues on his mis-statement. He affirms that Mr Hume's *instructions* must have been very limited, but on referring to the *Morning Chronicle* of the 31st, I find that that gentleman's details are most extended. First, he entered into an account of the revenue and expenditure of the Academy up to the year 1836, comprising a general estimate for sixty-eight years, and a particular account of its annual receipts and disbursements, taken from the evidence of the Presidents and Secretaries themselves. Second, a *seriatim* reply to each clause of the claims of the Academicians in their petition to the House. Third, numerous extracts from the writings of Sir M. A. Shee, tending to prove the injurious tendencies of academies in general, and the inefficiency of the schools of the Royal Academy of London in particular, then read a list of the students sent by the Institution to Rome, and contrasted the small amount thus expended with other branches of their outlay; also extracts of the petitions in favour of the inquiry, with the names of many eminent men attached thereto.

It is quite true, as mentioned by the monthly journal alluded to, that the debate was "*exceedingly animated and interesting*," containing, as it did, so many important statements on this very interesting subject; nor am I surprised that so rash an adviser should dissent from the opinion of Sir Robert Peel, Lord John Russell, the Chancellor of the Exchequer, and the President of the Board of Trade, who, though desirous of protecting the Academy, were unanimous in asserting the right of inquiry, and in regretting the course adopted by that body; but I am greatly surprised to find any one so lost to good sense and discretion as to advise them to resist the opinion of the House, and to place themselves in what the Chancellor of the Exchequer called a "false position" with the House and the country. But of the want of discretion in such an adviser, there can be no greater proof than is contained in his own inconsistencies. After declaring that the opponents of the Academy "have never personally attacked the members who compose it, but have, on the contrary, always affected to treat the academicians with respect," and having expressed his wish to "imitate their conduct in avoiding personalities," he shows so little command over his irascible temper that because Mr Hume said, "Take away the monopoly, and the public will repair in crowds to every exhibition of the fine arts," &c., this strange commentator does not hesitate to say, "And thus *this very ignorant and very illiberal item of the Legislature presumes to counsel a wholesale robbery.*" Well might the Honourable Member for Kilkenny say (in reference to former vulgar attacks), "*When argument is wanting resort is had to abuse.*"

Such is the style of writing which at this critical moment is intruding its venom into a discussion which ought to be managed

with candour and delicacy. If the system till now pursued is not the best calculated to forward the interests of art, why should it not be well considered and improved, or a more complete system be adopted?

I do not pretend to deny or disguise that my own conviction is opposed to the institutions that have spread over Europe during the last two hundred years, and I believe that, in this country most especially, something of a more popular character, and more suited to the varying circumstances of our commerce and our moral bearing, would be far preferable to any unchanging system, originally intended for circumstances that no longer endure; but I should like to hear opinions to the contrary, for so long as propriety of language is preserved, a multiplicity of views and arguments always leads to truth and mature judgment. With this view I shall be happy to submit for your next Number a plan for the promotion and extension of taste in science and in art. As such a view of the subject is essentially in accordance with the tendency of your prospectus, I trust it will meet with your approbation, and that others bent on the same beneficent purpose—the improvement of the community—will in all candour either expose such errors as I may fall into, or assist the objects by their suggestions and experience.

With sincere wishes for the success of your work,

I remain, sir,

Your very obedient servant,

A FERVENT ADMIRER OF THE FINE ARTS.

PRETENDERS TO THE BRITISH THRONE.

IN the mathematical estimate of contingent effects, there are forty-seven objections to being beheaded. The first of these is involved in the moral fact, that we have several private reasons for wishing to keep our heads upon our shoulders. Not to proceed any further than this, we frankly acknowledge a certain inability or indisposition to depend solely upon our trunks and limbs, and a positive infatuation in regarding the absence of the aforesaid heads as a loss for which no acceptable remedy can be offered,—not even by a proxy or substitute, however handsome, intelligent, and unexceptionable. We prefer our own individual heads. The fact is, we are used to them: we could not "think" so well with any other; and we feel assured that, inasmuch as all artists are not Chartists, there are few, if any, who would consciously run the risk of such a catastrophe by an overt act of high treason in thought, will, or deed.

We have been led to these serious reflections—reflections addressed, not only to "the serious," but far more to those artists who are still in the hey-day of youth; subject to all its impulsive

hopes, its temeritous designs, its delusive colours, its opaque shadows, dreadful fore-shortenings, and fatal "executions." In the nineteenth century, when the energies of the world seem to be roused afresh, and the soul of the artist begins to expand towards the discovery of new and fertile lands, which wait but for the plastic creations of his inspiring hand, it would be a sad and abrupt contrast and interruption to his brilliant career, if the easel were found to bring him to the scaffold! For him, alas!—the lost, the faded, the back-grounded, the gone!—would the ambitions of early days have been naught but melancholy illusion: for him, alas!—the cut-up, the fatal finished, the sent-home!—no more would admiring relations and applausive friends feel proud on the opening of new exhibitions, adorned with his works: for him, alas!—the erased, the blotted-out; in short, the man without his head!—no more would the eyes of "a liberal and enlightened public" rove from room to room, and from wall to wall; throng to his *studio*, if wealthy, or "sigh and look; sigh and look; sigh and look—and sigh again," in front of the rich lights and shadows of the great print-shops, wherein to enter the poor man's heart faileth, for lack of the means whereby more happy mortals purchase rare results of the genius and labour of other hands.

To come to the clear statement of the case, without the expression of further sympathy, *do* our artists really know what they are about? —do they know the perilous liabilities to which they expose themselves, by a line of conduct that cannot be considered or characterized as anything short of high treason in its highest form? There are at this very time openly exhibited, and gratuitously displayed in the most public and courtly streets of London, at least from twenty to fifty engravings and other prints, stated and affirmed to be portraits of her Most Gracious Majesty—and in every one of them the head of somebody else has been substituted! There is not a single figure among these various "designs" upon royalty, in the centre of whose fair shoulders some idolatrous head has not been set up by the pagan artists of the time! The "foregone conclusion" involved in this proceeding is of a tremendous character, such as we dare not explicitly commit to print. But we would most reverently and guardedly submit it to any rational mind, that wherever any trans position or substitution in parts or parcels of the human fabric is accomplished, a corresponding removal has of necessity been previously instituted. We bow with awe over our pale sheet of paper, and trust we are sufficiently understood.

Thus, then, we discover the exhibition of one form of the most terrific high treason. But this is not all. The Tower hill liabilities do not stop here. By the transpositions or substitutions aforesaid, the artists of this kingdom have palpably committed the further "form and pressure" of high treason, by directly and substantially inferring the living, copyable, and human existence of *other* sovereigns of the British Throne,—to which, if their pencils and pens were to be credited, there are at this very time upwards of fifty Pretenders!

If there were no difference between an individual and a multitude; between a legitimate substantiality, and a nominal adumbration; and that the vision of the public turned by the impulse of art, no less than nature, from the possible "one" to the suppositious "many" with rapturous satisfaction and fixed opinions; then, indeed, there might be some justification for so complex a proceeding as the present. But in portrait-painting, in the question of an individual *likeness*, the principle of multiplying and generalizing capricious ideas, is a heresy in art, whatever toleration there might be for it in French philosophy. In a word, these *soi-disant* portraits of her Majesty—we mean the real, legitimate Queen of England—are a set of bare-faced Pretenders. Some of them are libellous, from their ugliness; some from their deficiency of all beauty in the figure; some, it is true, may be termed the elegant extracts of humanity, but *all* are impostors. They are just what Jeremy Bentham would have called "fictitious entities."

Having offered this preliminary warning for the safety of our friends the artists, we must now proceed to specify a few instances of the more plausible and imposing among these Pretenders, for the benefit, and perhaps amusement, of our friends the amateurs, and the public at large.

Of the finely-painted portraits by Wilkie, Newton, and Hayter, we shall say little; first, because a large portion of the public has seen them with interrogative wonder in the Royal Academy; secondly, because they have not yet been engraved, or if so, have not found their way into the windows of the print-shops, so as to make the acquaintance of the public; and thirdly, because we have a respect for the genius of the artists in question. We shall merely observe, that certain portraits painted by them are said to have been copied from Her Majesty, but that they each represent somebody else (differing from each other as much as from her real liege Majesty) which Somebodies are palpable Pretenders, and have no claim whatever to the British Throne.

The first we have on our list of this extraordinary Gallery of Portraits, is painted by Mr J Stewart. The royal personage, whoever it may represent, is seated in a richly ornamented chair, with a plumed lady on each side, standing a little behind. Both these plumed ladies have a family likeness to the seated royalty; one of them most especially, and are evidently of Eastern origin. The royal Unknown is a beautiful specimen of oriental contour, and has the peculiar ancient Egyptian eye-brow and eye-lid in singular perfection. If her head and face, set in corresponding drapery, had been seen among the noble and lamented personages discovered on the walls of Belzoni's tomb, we should unhesitatingly have pronounced the royal fair one to have been a niece of Semiramis.

A very pleasing contrast to the foregoing will be found in the delicate simplicity of the portrait by Deffet Francis, of a young lady attired like "my aunt." It is a design of unaffected quietude, which rather fails in its intended effect. The neatness and simplicity

approach too near to formality, or at least to a certain precision. The repose of the picture is also disturbed by the antic presence of an extraordinary little animal just imported from the Brazils, which disports itself by the side of the young lady's right foot. It is called "the flying lap-dog," and is the only one of the species ever brought to this country. The little darling has Mercurial wings at each side of its head, and tufted paws of the same size as the feet of the young lady, although the former are of natural proportion. This is an interesting, remarkable, nay, an incredible coincidence. But who the lady is thus figuring as one of the Pretenders taking a walk in the country, we have not the remotest conception.

We have next to notice a very strange face indeed, presented to us by the original genius of William Fowler. We are quite unable to say what delicate creature in natural history this puzzling head and face resemble. There is something in it of the look of the *lama;* one which had been metamorphosed by some magician's wand into a Queen of the Friendly Islands. Her royal hair has recently undergone the most arduous of all the ceremonies of installation, termed "the passing of the Fish-bone Comb," and the tears have not long since glistened in the large, beautiful, and very uncommon sort of eyes. A carved conc-shell, with other crowning ornaments, is placed upon the head.

The large medallion modelled by Weigall, anaglyptographed by Bates, and engraved by Freebairn, very much surprises us—for it actually bears some resemblance to the person of her Most Gracious Majesty, Victoria! It is, however, too sharp in its drawing, and the expression, as well as the features, is too acute and metallic. It is, nevertheless, beautiful as a work of art, however over-idealized as a portrait.

Something very similar may be said of the profile-head by R. J. Lane. It is a quiet, pleasing, graceful, and interesting idea of what Her Majesty might have been; and we have seen many English faces uncommonly like it. The tints on the face, the flower wreath, and on the crown, are most delicately executed, and the whole is a beautiful specimen of a peculiar branch of art. Under the same category we must also place the elegant works of the high-finishing Collen, and Pistrucci.

There is a portrait by Sully, painted for the United States, whereby our trans-Atlantic brethren are secure of as wrong an impression of the real Sovereign of these realms as could well have been contrived. The expression reminds us, not so much of Titian, as of what was said of him by a quaint admirer, as we learn from 'Northcote's Conversations.' The words were—"Ah! he was a fine old *mouser!*" alluding to the watchful, cat-like expression which he so continually gave to his portraits. Now, this lady, whoever she may be—for most certainly she is *not* the Lady of our throne—this mysterious lady of Sully's, is a fine young mouser, and displays very considerable shrewdness, penetration, and practical intellect. The design has something in it extremely good, though

there is a failure in the execution. The attitude is rather equivocal, and the look of the face both dares and scrutinizes the rod of criticism, as though the artist intended to get up a sort of contest between the picture and the spectator, which may perhaps be appreciated in America. The light is also thrown in the same direction as the figure, and since the attitude is peculiar, it ought rather to have been relieved, we think, by the light crossing it, instead of repeating and enhancing this peculiarity. Still, there is much to admire in this Pretender; we mean as a picture.

Swandale's historical picture of 'The Sick Queen' is painfully interesting. We do not in the least know of what country in Europe she happens to be the Queen, but we perceive that she is very sick. This unfortunate Pretender, who is so very much "out of order," is seated in a lofty-backed chair, which has a thickly-chased, or embossed, border round it, like a silver dish or salver. The lion and unicorn, on the top, gaze at each other in utter astonishment, their whole conduct bearing direct reference to the painful Pretender beneath, from whose poor, lean, unattractive shoulders their allegiance naturally revolts. There is another and a larger lion in the back-ground, leaning over a parapet, and gazing thoughtfully down into the garden, with a contour of face that bears a close resemblance to some of the portraits of Johanna Southcote. It is no more like a lion than the invalid Pretender is like the Queen of England.

The portrait by E. T. Parris has been considered to display a strong likeness to the accomplished original; and although the plume-shaped lace standing back from the elbows and pointing upwards, is too close a copy from the large feather head-dresses of the ancient Mexicans, we are nevertheless assured that all the relatives, friends, and admirers of the much-regretted Madame Malibran, duly feel, and acknowledge as they ought, this noble, though very presumptuous, compliment paid to the memory of her departed countenance. The cheek bones are not quite high enough, neither is the under jaw sufficiently characteristic; but, then, the very fame and reputation in which Mr Parris rejoices, is chiefly founded upon the invariable success of his talent in softening away all characteristic traits whatever.

There is the lithograph of a seated figure by A. E. Chalon, in which we find much to admire, though we have not the least notion as to who the lady may be, nor can we feel assured, if the artist were put to his oath, that he could possibly give us the desired information. The dress of the lady is very elegantly managed, both as to form and the suggestions of its delicate water-waving texture. The dark apron is a good introduction, but we think it injures, rather than enhances the grace of the rest of the picture, by being too short, black, square, and *masonic*. To the appearance, however, of the dark peg protruding at the bottom of the dress, we must decidedly object. It gives a frightful intimation of the unfortunate loss of a limb, and the calamitous necessity of an ebony, or other

wooden proxy. The fore-shortening of the right arm is rather *too* easily managed; in other words, it is not managed at all, but badly evaded in the folds of the dress. It has the appearance of a hand growing or hanging out of a short sleeve. In this Pretender we do not recognize a single feature or shade of expression to justify the "pretension." The portrait of the bonnet is very good. As a work of art, this picture is worthy of much praise. The light is gracefully managed, and the sky and back-ground are extremely tasteful, airy, and beautiful.

A very large and imposing print has been exhibited in the principal print-shops in which the division of labour has not altogether realized the motto of *divide et impera*. The figures are "drawn" by F. Taylor; the portraits are by S. W. Reynolds. Each may thus answer for his own. Since both have *much* to answer for, this identification of their several labours is extremely satisfactory to the sense of justice. The first thing, then, that catches the spectator's eye, is the "drawing" of the horse, ridden by a very novel sort of a Pretender, concerning whom we shall presently offer a remark. The head and neck of this horse have evidently been copied (separately from the rest of the animal) from some model, and have been badly joined to the body. The right fore-leg of this unfortunate creature has a broken thigh of anomalous shape, position, and dimensions. It presents the appearance of a very large leg of mutton. The hoofs of the fore-legs are set in a perspective distance of at least three yards asunder. To speak "by the almanack," we should say that one leg stood on the date of the picture — the other hovered over the middle of next week. Some of the portraits are good. His Grace of Wellington is good; so is Lord Hill, though he has rather a foolish expression on the present occasion; Leopold is also very good, although his look at the Pretender is more envious and malevolent than it was quite politic to convey. The face of his horse manifests another phase of the state of his mind, and has a downward gaze of non-resignation. The Pretender is here represented in the character of a little Scotch boy with a tolerably clean face, who is performing a covert act of whistling, with an expression of face, which is indifferent, half-humorous, and negative, as if to pretend that the whistling proceeded from somebody else. The figures and faces in the back-ground are good.

A. Aglio has presented the public with a very singular Pretender, who is moreover placed under very singular circumstances. The circumstances chosen by this artist are of so very novel a description that we must speak of them first. The figure has a fine *jet* of drapery, spouting out from the centre of the crown and pouring down over the back. It oozes out under and around the upper or short sleeve of the right arm, down which it falls, in imitation of a figure in water-works. The Pretender seems, in fact, to be standing under a concealed shower-bath. Now, this is all very sad! It may be very new, very original, very well-meant; but what is it intended to prove? What is the idea intended to be conveyed? What is

the allegory? Does it bear any reference to St Swithin, or is it intended as a type of the Sovereignty of the seas? Something—and something very important, too—must evidently be meant, but what that may be we can no more understand than what personage it is who undergoes this tasteful saturation. Had we seen such a figure without any treasonable letter-press underneath, we should have imagined it might have been some emblematic figure of the London Water-works. This is not the only peculiarity. The face and legislative action of the left arm, hand, and fore-finger, are those of timid proposition and direction. Substitute a simple English lady's dress for the aquarian adornments, and the figure presents the appearance of the young lady of a house in private life, giving her orders for the first time to an old hot-tempered family cook, who now confronts her. There is something really affecting in the timidity with which she expresses her directions, and strives to maintain an outward appearance of calmness.

The large, full-length portrait by A. E. Chalon, is certainly a most splendid and imposing picture. An engraving so brilliant, yet so chaste; so striking, yet so delicate and graceful; has scarcely ever before been presented to the eyes of an admiring public. That it is a Pretender, like the rest, we deeply regret; but that it bears so little resemblance to the Queen of these realms, is, at the same time, a circumstance to be pardoned, inasmuch as no ideas of comparison can interfere with our contemplation of it as a work of art. The design of the head and figure is beautiful. Nothing can surpass the loveliness of the left hand. The right arm and hand, and the manner in which the fingers hold the graceful, easy-falling handkerchief, no one but A. E. Chalon could, we believe, have so finely accomplished. The back-ground is chaste, yet lustrous. The massive drapery of the train, falling darkly over the descent of the steps of a sort of terrace, whereupon the figure stands, is grandly effective (though the design is not altogether original), and very cleverly conducted down and relieved by the long rich wreath of flowers on the other side. The weight and substance of this train, appended to so youthful a figure, is, however, overdone. To advert to the fact that a delicate figure like the one in the picture could by no means walk half-a-dozen steps with such a weight dragging behind her, is no argument in realities (though it is an argument in art when addressed painfully to the eye and to the imagination), because half-a-dozen pages would endeavour to support it. But *could* they—that is the question? The material is evidently of a most rich and weighty substance, and we cannot see how the poor boys could accomplish the task during a procession of fifty yards, unless there were a secret wheel-barrow underneath the centre of its folded bulk, to sustain the intolerable ponderosity. The lion's face at the side is strongly expressive of a sense of "the weight of mightiest draperies," at which his left eye is painfully gazing. As a whole, the effect of this superb engraving is injured by a monotony of dazzling blacks and whites. It is too spotty. The innumerable and invariable se-

quence of the black tufts may be strictly true in costume; but surely it was the part of so fine an artist as A. E. Chalon (an artist the more unpardonable, with such talents, for his numerous freaks and figments) to have subdued these effects which are so unpleasing to the eye, and so destructive to the breadth of beauty he might otherwise have obtained.

Of these Pretenders to the British Throne, we have a long list, which has been furnished to us by our acute and laconic friend, William Guillotine, "for sundry weighty reasons." But we can proceed no further with them. Our readers will not, however, regret this, especially when they perceive that we are about to lead them to a consummation which has so long been "devoutly wished" by the discriminating portions of the English public. Deeply indeed have the populations of the country felt—and the metropolitan population of all classes, more particularly—the want of some one positive likeness of her Majesty. How many most respectable individuals, outraged and astounded by the innumerable, ever-varying, and high-treasonable misrepresentations of Royalty, have exclaimed with us, and with the poet,—

> "N ought is there under heaven's wide hollowness
> That moves more dear compassion of the mind
> Than beauty brought to unworthy wretchedness
> By envy's snares or fortune's freaks unkind!
> I, whether lately through her brightness blind,
> Or thro' allegiance and fast fealty,
> Which I do owe unto all woman kind,
> Feel my heart pierced with so great agony
> When such I see, that all for pity I could die!
>
> The Fairy Queen,—*Canto III.*

On the 1st of September, precisely one year ago, there appeared in the Miscellany of her Majesty's indefatigable and cornucopian bookseller, the star-encircled Bentley, and under the tutelary surveillance of her Majesty's faithful and laughter-moving editor, Charles Dickens, an article which we adventurously put forth under the title of the "Great State Secret." It was on the same subject as the present, viz., the innumerable portraits designated as representing the "person, favour, and grace" of her Majesty, with the apparent impossibility of accomplishing any such undertaking. With the intent to point out a distant prospect of success, by making the desired portrait the subject of a state measure, we found it necessary to show both precedent and authority for the same; and thereunto did ransack and overcome the dust and difficulty of many mouldy records, until we disinterred and collated the documents required. We beg permission to lay before our readers an extract from the papers aforesaid.

"Queen Elizabeth, as artists and others say, was a difficult person 'to take.' She insisted upon sitting or standing her own way, which was not always the best. The nervousness occasioned by the proximity of so much 'dread delight' might also have dazzled the limners' eyes, confounded their hearts, and rendered their hands unsteady and ineffectual. Howbeit, they gave her no satisfaction

by their performances; and were driven, howling, from her presence. She considered that Spenser came much the nearest to a faithful representation of her virgin graces, but then he was only a poet. Nevertheless, and rather the more, though she refused to be taken by limners, the production of portraits, so called, multiplied throughout her realms, representing her still less like herself than before, and of an uglier favour than ever. She exclaimed much in private against the 'wicked and impertinent artists' who thus belied her outward form, and the delicate expressions of its natural beauty, favour, and grace. They, however, persisted in exercising and vending their wicked and impertinent fancies, until her Majesty could stand it no longer. She accordingly published the following Edict, which we shall give verbatim from the document in the British Museum."

"Forasmuch as the natural desire that all sorts of subjects and people, both noble and mean, have to procure the portrait and picture of the Queen's Majestie, grete numbers of paynters, and some printers and gravers, have already and doe daily *attempt* to make *in divers manners* Portraitures of her Majestie in paynting, &c. Wherein it is *evidently shown that hitherto none have sufficiently expressed the natural representation of her Majestie's person, favor, or grace, but for the most part have erred therein*, as thereof daily complaynts are made among her Majestie's loving subjects, in so much for the redress thereof her Majesty hath lately been so instantly and importunately sued unto by the Lords of the Council and others of her Nobility, in respect of the *grete disorder herein used*, not onely to be content that some speciall conyng Paynter might be permitted by access to her Majestie to take the naturall representation of her Majestie, whereof she hath bene allways of her own right disposition very unwylling."

If the reader will only picture to himself Queen Elizabeth's blush-royal look behind her gigantic fan, with the rest of her high-built head walled up in starched ruff, three quarters round, while she dictated the first sentence of the following, his time will not be wasted.

"Therfor her Majestie, being herein *as it were overcome* with the contynuall requests of so many of hir Nobility and Lords, which she cannot well denye, is pleased that for their contentations some conyng person, mete therfor, shall shortly make a Pourtrait of her Majestie to be participated to others for the satisfaction of her loving subjects; and farder commandeth all manner of persons in the mean tyme to forbear from paynting, graving, printing, or making any pourtrait of her Majestie untill some speciall person shall be by her allowed, and shall have first finished a pourtrait of herself, after which finished her Majesty will be content that all other paynters, printers, or gravers, that shall be known men of understanding, shall follow at their pleasures the said Patron or first Portraiture; and for that her Majesty perceiveth that a grete number of her loving subjects are much grieved, and take great offense with the errors and defor-

mities already committed, to sundry persons in this behalf she straightly chargeth all her officers to see due observation thereof, and to reform the errors already committed, and to prohibit the showing or publication of such as are apperently deformed, which is reasonable."

Decree issued in the year 1653. *The original is in the handwriting of Lord Burghly, then Cecil, and is now in the State-paper Office.*

"We thus discover how it has happened that all the portraits of Queen Elizabeth are corresponsive. You know her in a moment! 'Forbear' therefore, ye multitude of 'wicked and impertinent artists!'—the decree commands 'all manner' of ye to forbear until the production of the Patron Portrait; and even then the honour is confined to such among your ardent tribe as 'shall be known men of understanding.' Venture not temeritously to infringe this command, which 'straightway chargeth all her Majesty's officers to see due observation thereof;' in other words, applicable to modern times, you will in such a case be taken in charge by the police, and dealt with according to the degree of the deformity produced."

"Well—these things cannot be helped at present. There *must* be a Patron Portrait!"

"Imagine it done!—imagine some artist, favoured of heaven, to have actually accomplished a portrait, pronounced by the Lords Melbourne, Russell, Palmerston, and Glenelg, according to the edict, as a perfect likeness, and worthy to become the Patron of and for all future likenesses! Imagine, next, an immense house, or hall, to be called the House of Correction. It is lighted by a sky-light running all along the roof, and there are seven hundred and thirty-six easels placed at equal distances down both sides of the hall. The Patron Portrait hangs up at one end. A trumpet sounds at day-break,—folding-doors are suddenly flung open, and seven hundred and thirty-six wicked and impertinent artists rush in, and, placing their ever-various portraits on their respective easels, set to work to change the faces into the true favour and grace of the Patron placed on high."

A twelvemonth has elapsed. Short period for the development of so great an act—long interval for the half-despairing eyes of loving subjects—but, thanks to heaven, and the artist favourer thereof! the national deed is at length accomplished! There is no need for the arduous task of "imagining" it done, for it is actually done, and any lover of art or loyalty, or both, may see it. We heard there anent some weeks since, and heard with unbelieving ears; our informant persisted;—we demurred:—he dragged us in our scepticism to the house of Colnaghi and Puckle, and the likeness made us speechless. It took our breath away—no wonder we could not speak. It has now, we doubt not, and is sure to continue to have, a similar effect upon others. We shall say nothing of it, at present, as a picture; little of it as a work of art. How it may be enhanced or injured when completed in all its parts, we know not,

and shall not, therefore, say a word anticipative of final results of finishing. Without speculating in the least upon what it is not, we shall legally confine ourselves to what it is. It is a likeness of Her Majesty—and the only one yet. The Patron Portrait is at length produced, and all the wicked and high-treasonable artists who have hitherto amused themselves and misled the world by their professional freaks, fancies, and "soft ideas," will soon have to "fly" to the Hall of Correction, by Royal Authority, and metamorphose their ideal impersonations into the fair pictorial reality placed before them.

The fortunate individual—"O, wise young judge, how much older art thou than thy years!" is W. C. Ross. We are not altogether one of Mr Ross's greatest admirers; at all events we never were till now. We fancied he had too resolute a tendency to represent the human face with the complexion of some lovely flower or beautiful shell, rather than an animated life-like human creature, made of fleshy substance without, and spirit within. But if an individual really has a complexion of these peculiarly fair and delicate qualities, we may consider such an artist most marvellously favoured by fortune, in finding his floral and conchological peculiarity (not applicable in most instances) borne out and justified by the most important reality, which his artistical life was ever employed to contemplate. In the present instance, not only is the expression life-like and true to Her Majesty, but every feature is a fac-simile. The eyes are most beautifully painted, and have a living look: they, moreover, possess that steady clearness, and quiet intelligence, which is characteristic of a sight that few things escape, and that sees all without effort or any apparent scrutiny. It is also an eye denoting retentive powers of memory and a talent for languages. In short, the physiognomist and phrenologists may now commence their studies in earnest, and to some purpose; and whatever errors they may chance to make in their estimate of Her Majesty, we are satisfied that the fault will be their own, and not that of the artist. In these days of fanciful deformities, vague nonentities, and incessant repetitions of the same sickly sort of face, the same features of "regular" stupidity, the same mawkish expression, it is no small thing to find an artist who has overcome a state-difficulty by an honest version of reality, and put to flight a thousand fallacies, after the manner of a great philosopher, *viz.* by the enunciation of one truth. Seek no more, then, ye "painters and gravers" of the land, to delude the public by the importation of Pretenders from Egypt, from Greece, from Spain, or from France, for the actual likeness of Her Majesty of England has at length been accomplished. R. H. H.

Music in Turkey.—Italian music has become the rage among the Mussulmans, and there is now a brilliant Italian opera at Constantinople. The large and splendid theatre is crowded nightly, notwithstanding the high prices of admission, which vary from two to ten piastres (from eight to forty shillings); and the Turks, notwithstanding their usual habit of going to bed with the fowls, sit motionless till the end of the entertainment, which is often past midnight. The late Sultan Mahmoud sometimes

honoured this theatre with his presence, and had Italian operas performed, within the seraglio, before the ladies of his court. The vocal company is described as good, and occasionally containing distinguished performers. One of them, Signora Edelina Fritsche, a young and handsome Milanese, gives lessons in singing to young Turkish ladies of fashion, and makes her rounds of professional visits in a magnificent litter, richly fitted up with crimson velvet and gold, carried by four black slaves, and preceded and followed by eight others. Among the pieces performed have been Bellini's *Straniera*, Meyerbeer's *Crociato in Egitto*, and Rossini's *Italiana in Algeri;* but, as may be supposed, the *libretti* are strangely altered to suit Turkish ideas. For example, the *Italiana in Algeri* terminates with the marriage of *Isabella* and the *Dey*, and the punishment of poor *Taddeo*, who receives the bastinado on the soles of his feet, drew shouts of applause (the Turks do not laugh) from the audience.

The Harmoniphon.—A musical instrument, lately invented by M. Paris of Dijon, has attracted much notice in France. It resembles the instrument called the *Concertina*, well known in London from the very clever performance of young Regondi; but it seems to be superior, in some respects, to the concertina. The sound is produced by the vibration of thin metallic plates, and it is played by keys like those of the piano-forte; but the air which acts upon the vibrating substances, instead of proceeding from bellows within the instrument, is blown *by the mouth* through an elastic tube. The excellence of the instrument, accordingly, consists in this, that, while the fingers on the keys merely mark the different notes of the scale, the *expression* lies in the mouth. It is the living breath of the performer which gives accent, articulation, and emphasis to the notes, as in the oboe or clarionet, and enables the performer to "discourse most eloquent music," in a manner which the production of sound by the mechanical contrivance of a bellows does not admit of. The *Harmoniphon* is made in three varieties: the first is of the compass of the oboe, the second of the Coruo Inglese, and the third (of a larger size than the others) combines both these instruments, and has a compass of three octaves. This instrument is highly approved by the French composers; and one of them, M. Adolphe Adam, has given an account of it in the *Monde Dramatique*, in which its capabilities are pointed out. It is calculated, in particular, to be of great utility in provincial orchestras, where it is an excellent substitute for the *oboe*—an instrument as disagreeable in the hands of an ordinary performer as it is delightful in those of a Grattan Cooke. Accordingly, we are informed, the *Harmoniphon* has already been adopted in the orchestras of many provincial theatres and musical societies.

FOREIGN ART.

There is no department of the Polytechnic Journal which will exact from us so large an amount of labour as this. The artists of Great Britain (with some very few exceptions) may be said to know nothing at all of what is going forward upon foreign ground. To furnish them with ample information on all subjects connected with the progress of art on the continent, is one of our primary objects; but, in our endeavours to do this, we have met with unexpected and very serious difficulties. Nevertheless, we are encouraged to proceed by the assurance we feel of being ultimately—we may say *shortly*—able to supply data of first-rate interest. We are indebted to the kindness of a very influential and universally esteemed member of parliament, the best friend the artist has in England, for the foundation of a plan which will ensure us regular communications from Paris, Munich, Vienna, Frankfort, Berlin, Rome, Florence, Milan, Venice, and other cities, having sole reference to the state of art and the doings of artists in those places, in conjunction with the discoveries of science and the proceedings of its professors. The consolidation of this plan has not yet been perfected, because the gentleman alluded to only became aware of our intention by the publication of our prospectus three weeks ago; but as his zeal in the cause of art is only equalled by his industry, we entertain no doubt of being able in our next number to present our readers with valuable correspondence from every one of the places mentioned. This correspondence will emanate from individuals who look around them with the patriotic

intention of communicating to the artists of their own country whatever they see which may tend to national advancement in art; and it will consequently be free from the prejudice of private feeling on the one hand, and the warp of party on the other. Meanwhile we must perforce content ourselves with supplying to our readers whatever information we have been able to glean from the foreign journals; and in doing this we beg of them to recollect that we by no means vouch for the facts of the statements or the assumed inferences. All we can pledge ourselves to is the correctness of the translations, and this we do. As the most important of continental cities, we commence with

PARIS.

Obliged, as we have been, to go carefully over a mass of newspapers and periodicals in every language, we have been almost bewildered with the number of exhibitions of art, publications relating to art, architectural structures, exhibitions of paintings and statuary, which have sprouted up in every one of the smaller towns of Europe. It will be impossible to do anything in the present number but clear the ground, and lay the foundation for the stores of information which in due time will be forthcoming.

The annual exhibition of the Royal Academy is closed; so is the Exhibition *Industrielle*. The following is an extract from the report of Baron Thenardt, President of the Jury of Prizes:—"The first notion of publicly exhibiting objects of industry belongs to France.* Wonderful as they are, they seem still more so if we consider that they were first established amidst the strifes of war, France being then attacked by the whole of Europe. The war had impeded greatly this result; but as far back as from 1819 to 1827 England began to feel that a rival was growing up on this side of the channel. The result has now become developed. "The spinning of cotton by machinery has been fully conquered by France; our fine chintz, shawls, and silk are copiously exhibited in the London shops; our plain and embroidered muslins have banished the Swiss and British from the market; wool begins to rival cottons in colour, and it has found a market even in places where the latter grows plentifully. The culture of silk has increased amazingly, and it is to be calculated that in 10 years France will be free of the tribute it still pays for that article, and which amounts to 40 millions of francs annually." Baron T. concluded by paying the manufacturers of paper, woollen goods, mechanical instruments, glass, lithographic works, and leather, the greatest encomiums, and said of the last-named article,—"Hitherto we have been obliged to import glazed leather from England, now we *sell* it to that country."

The Chambers have voted a pension of 6,000 francs annually to M. Daguerre, and 4,000 to M. Niepce, for their conjoint invention and improvement of the photogenic art. The report of M. Arrago thereon beams with the spirit and brilliancy possessed in so great a degree by that superior man. Referring to whether the arts will benefit by this discovery, he adduces the testimony of M. Paul Delaroche, who says, "that from photogenic drawings even the best painters will derive instruction. The most astonishing part is, that the minutest detail in no way interferes with the quietness of the masses and the grand total effect. The pictures exhibit the appearance of an impressive model, and at the same time a rich ensemble of tone and harmony. The painter may thus obtain an endless variety of studies, &c." The English public, with regret, will learn that the benefits of this valuable discovery were lost to Great Britain 15 years ago, by a too stringent adherence to some official and probably unnecessary rule.

The exhibition of arts at Paris comprised 2,704 subjects, amongst which the proportion of historical pictures was great, owing to the facilities afforded to French painters, not only in the Royal School of Arts at Paris, but also in their Academy at Rome. Horace Vernet's grand pictures of the battle of Constantine were the most applauded. They are magnificent compositions, in which Vernet's skill in drawing men and horses was fully exhibited. The size of the canvass is very large, being 30 feet by 20, so that the united surfaces of the three pictures cover about

* Is this true? Was not the building which originally filled the site now occupied by the National Gallery open as an exhibition of national manufactures before anything of the kind was done in France? Mr Teplis can answer the question.—Ed.

1,200 square feet. However, the great master was able to complete the whole in eight months. Scheffer has exhibited five pictures, of which 'Faust and Margaret' is one of the best. The face of the simple young girl is such as only Raphael has hitherto been able to produce. This picture was valued at 500*l*. 'The King of Thule,' also, after Goethe, is of the same merit. A scene from Sir Walter Scott's 'Monastery,' the death of Avenel, has been painted by that talented artist Tony Johannot. Gudin's sea battles were in the very first style, and the stamp of an accomplished master was impressed upon every one of them. Henry Scheffer has been, as usual, successful in portraits; at a former exhibition, those of De Vaux and Arago attracted general attention; this year that of M. Lafitte met with the same success. Scheffer had even the honour of being admitted to the Council Chamber for the purpose of painting the assemblage of French Ministers, presided over by Louis Philippe. In the department of statuary, 'Cain and his Family,' a noble production of colossal dimensions, is of the highest order of classical composition. Speaking of some other works in marble, a French paper says—"Although there are several other masterpieces in the exhibition, the journals, as usual, decry them as common-place. The writers in these papers do not seem to know that their criticisms, and not the works they understand not, are "common-place." We fear there is too much truth in this remark as applicable to public writers on both sides the Channel.

Experiments for the discovery of the best method of preparing colours for painting are now going on all over the continent. In a work of Frederick Knienim, Leipzig, 1839, the ancient plan of mixing resin with colour is discussed. The author states that this method of preparation is far superior to all others hitherto known. On the same subject we find that Mr Francesco Scaramuzza, an artist in Parma, has lately executed some paintings on a large wall, in which (it is stated) he has nearly approached the effects observable in very ancient objects of art. It is supposed that Mr Scarramuzza has used wax in a hot state dissolved in acid; which latter, evaporating quickly, leaves the wax behind, whereby a great effect is produced. On the subject of these interesting experiments, we extract from the *Giornale di Lucca* a letter of Professor Ridolfi:—

"I have endeavoured to find a method of painting which would unite durability with the greatest brightness and clearness of colour, and would not be subjected to become dark, or to blacken with time, which is always the case if we use fat-oils (olei fissi). In my little work, 'Sull' insegnamento della pittura,' I have endeavoured to make our youth imbibe the desire of finding out the method of the Greeks, with the aid of which they accomplished such wonders of art. I made various experiments to paint *al encausto*, and I have found to my great satisfaction that, by uniting several methods, something very near the ancient productions can be accomplished; and I believe, further, that it is not necessary that our proceedings should be exactly the same as described by Pliny; described, moreover, more in the way of a scientific man than of an artist, and difficult to be understood. I have tried two methods to paint with wax; one by admixing it with essential oil, and the other by employing water. I give, however, the preference to the first; and I am further of opinion that the ancients also used oil in preference, dissolving the wax in naphta (as is done even now in Persia), or with some other essential oil. I use, moreover, with the wax and the essential oil, resins; and especially I prefer copal (as the hardest and the clearest of all), which, after many fruitless endeavours, I have succeeded in dissolving without the help of fire. I believe firmly that the Greeks used resin in their paintings for the sake of making them both more clear and transparent, and more durable; and I think, finally, that, whatever may be the method used in painting, it should last of all receive a coat of the purest wax, without any admixture, which wax must be dissolved in fire, and the whole finally rubbed with some cloth. With this method I intend to paint in one of our churches a work after the ancient style, which perhaps will be the largest and only work made of that kind in Italy. I congratulate, at the same time, Mr Scarramuzza, and beg he will continue his experiments, and I hope our endeavours will finish by enriching the *pallette* with colours, without the fear of their being altered by time."

Among the two thousand statues of the twelfth and thirteenth centuries which

adorn the outside of the Cathedral of Chalons, M. Didron, the Secretary of the Historical Committee of Arts and Monuments, has discovered a statue of Liberty, with the word *Libertas* engraved thereon in the characters of the twelfth century. The right hand holds a sword, and the left sustains a shield, upon which two crowns are placed.

The Magdalen Church is about to be completed. This fine edifice, which was commenced 75 years ago, was destined by Napoleon as the "Temple of Glory" dedicated to the French army.

The wood-engravings in "Paul and Virginia" are considered by the continental press to be the most superior specimens of that art ever produced, and much credit is awarded to the (French) artists who executed them.—[If continental critics were in the habit of attending to the injunction *audi alteram partem*, they would have found out before now, that most of these justly-praised engravings were executed by *English* artists.—Ed.]

Several of the French newspapers are vituperating the Bank of Paris with all their might and main for being overreached in the late loan by the Bank of England. One of them says that the ancient inscription on the French dollar, "Dieu protège la France," ought to be changed to "Dieu supporte l'Angleterre."

M. de Prony, of the French Institute, died lately at Paris, aged 85. He was an excellent mathematician.

MUNICH.

If we may rely upon an opinion published by M. Schelling, glass-painting is likely to arrive at the same point of perfection which it attained in the middle ages. According to the statement of this author, the results of experiments instituted by M. Frank (by order of the King of Bavaria) in the royal China manufactory are perfectly satisfactory. New combinations of colours were required to be invented: and it is stated that the glass-painter ought to calculate his work for a distant spectator; that the execution ought not to be timid; and that the rose and purple colours prepared from the gold, as well as the flesh tints, must not be used too profusely.

The Art-Union of Munich (Künst-Verein) numbers 2,167 members, and its income for the last year was 26,357 florins, equal, according to the rate of exchange, to about 2,000*l.* English; but if the cheapness of living in Bavaria be taken into consideration, it will not be exceeding the truth to say that 3,000*l.* sterling would be a nearer comparison. Six hundred and sixty-nine objects of art have been exhibited, including the *Via Male* in Switzerland, a large landscape by Heinlein; *Christ in the Grave*, by Eichner; and the *Flight of Arminius*, by Lindenschmidt.

The building of the Walhalle (a sort of gallery of the great men in Germany) is rapidly progressing. No wood is used in any part of the structure, and even the beams of the roof are made of iron.

The equestrian statue of the Elector Maximilian the First is nearly finished. The metal employed in this monument weighs 150 centners, and the body of the horse is so large that 19 persons may find room in its cavity. Sir Robert Peel, in lately alluding to the progress of art in Munich, justly observed, that column after column was not repeated to the memories of their great men.*

M. Mitezer, Professor at the Polytechnic School in Munich, has published a work of much interest to artists, entitled, "Collection of Grecian Outlines (Profiles) of Architecture, with an Instruction for making Profile Drawings." The original sketches were executed by the author in Greece, and the price of the work is about 12s.

VIENNA.

The Cabinet Cicognara, composed of a rich collection of engravings of the earliest period of art in Italy and Germany, will be sold at Vienna on the 4th of this month (September). The catalogue has been made by M. Alexandre Zanitti, after the plan of his work, "The first Century of Calcography."

A "Journal of Taverns" has lately appeared at Manheim, edited by a society of epicureans. *Chacun à son gout* is the motto attached to the publication, which is rich in all the simple and compound elements of gastronomy.—[This is not a bad hint for some of our popular book-manufacturers.—Ed.]

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* Did Sir Robert Peel vote for the *column* to Nelson?

BERLIN.

The King of Prussia has presented the Sculptor Kiss with 5,000 dollars. His 'Group of Amazons' will probably be cast in bronze, and placed before the Berlin Museum.

Catalogues have lately been published of the collections of art in Berlin, such as the Royal Collection of Paintings, the Collection of Prussian Antiquities, the Künstkammer, &c.; which leave nothing to be desired on the score of information. Even private cabinets, such as that of the Swedish Consul-General, &c., have been fully described.

A new building for the Royal Library is projected, the estimated cost of which is 500,000 dollars.

The first number of 'Pictures of Herculaneum and Pompeii,' by Messieurs Ternise and Müller, has lately appeared. The plates, in large folio, are much praised for their accuracy and execution.

M. E. Genhard has lately collected many metallic reflectors of the ancient Etruscans, found in the recent excavations of Clusium, Perusia, Valsi, &c.; and he proposes to publish a work on the subject. As the ancients did not possess our modern glass reflectors (looking-glasses) these researches are the more interesting.

NUREMBERG.

The bronze statue of Albert Durer to be erected in Nuremberg has been cast by M. Burgschmidt, of that town. A recent traveller, who visited the *studio* of the modest artist, says that he found it in a corner of one of the *lanes* of the town. What will Sir Francis Chantrey say to this?

ST PETERSBURG.

M. Strassaf, who built the celebrated winter palace, has received from the Emperor a present of 50,000 roubles, in addition to the star of one of the imperial orders and the income of a crown domain for life. The persons employed in the building have also been proportionately remunerated.

VENICE.

Signor Giuseppe Antonelli, who has obtained several gold prize medals, has lately been honoured by the present of a precious brooch from the King of Greece, to whom he dedicated his clever typographical plate, "The Oath of Allegiance of the Greek," lithographed by Antonio Mandello, after an oil painting by Ludovico Lipparini.

MILAN.

A Journal, entitled 'Il Politecnico," has lately made its appearance in this city. It is much praised by the press, and is conducted by the proprietors, Padre Ottavio Ferrari, Professor Menini, and De Kramer, names well known in chemistry.

ANCIENT AND MODERN ART.

By W. Collier.

The origin of art is so densely clouded in mystery, that to attempt to trace it to its source, would in all probability prove but a useless expenditure of patience, and an ostentatious display of erudition. The interests of art in the present day would derive but a slender advantage from the theories, or even from the productions of ages in which painting had made comparatively trivial advances. Let the antiquary ruminate with pleasure among the collections of Indian and Egyptian deformities, but our modern artists can only review them as curious specimens of infantine art, from which he will turn with indifference, to revel in the refined beauties of Grecian perfection. It has been truly said by some writer on "The Fine Arts," whose name is unknown to the author of

this paper, that "an inquiry into the principles which guided those ancient artists, whose works are considered models of excellence, is of the utmost importance, for without the aid of rational theory no works of superior merit can ever be produced; and though occasionally we are induced to admire the irregular but unfettered genius, we must ever bear in mind that salutary rules were the basis of the extraordinary qualities we were compelled to admire, and that it was only when confidence was obtained, by long practice and a strict adherence to theory, that the inspired artist burst from the trammels of schools, and soaring into faulty excellence defied the voice of criticism."

It is well known that the earliest productions were cold and unpleasant attempts at imitation, without the most remote effort at ennobling art by enlarging its sphere with a display of character and feeling. There is much truth in the statement that, "success in art must depend in a great measure on its progressors being fully impressed with the many difficulties they may have to encounter, without being daunted by the distance of the goal they propose to attain." The earliest masters must have been deficient in this quality, having no specimens with which they might have compared their own works. Art was then in its infancy, and its votaries were their own standards of excellence and their own critics, for the minds of the uninitiated were those totally incapable of relishing even the crude productions of that age. The artist may form some idea of his progress by comparing each successive work with his preceding efforts. Still he only forms an opinion of his advances on himself, and remains totally ignorant of the state of his progress with relation to art in general.

It is not astonishing, then, that without any stimulus to further exertion, the early painters should have made such trifling progress, and that in lieu of aiming at excellencies, which by labour and judgment they might have attained, they contented themselves with so contracted a sphere of exertion. Though they might have been daunted at the prospect of difficulties which lay before them, the very perception of impediments would have been a sure sign of improvement. In a valley, the horizon must necessarily be confined; but as we ascend, its extent becomes enlarged, and we are astonished at finding vast tracts of land beyond what appeared to us the boundary of the earth. The Indians, Egyptians, and Chinese, have gone round and round in a given tract, and, like unambitious travellers, have never dreamed of a more extended plain: they were persuaded that little more was to be learned than they had already acquired, and were content to admire even the defect of their own imperfect productions.

The Chinese appear to have made little or no advance since the earliest period, and from what we have been able to collect of the state of the arts in that quarter, up to the present time, we view their productions with astonishment, but without delight. Among the Persians, religion appears to have been the great impediment to anything like progress in the arts. They considered the representations of their Deity, in human form, as a species of sacrilege; and it is well authenticated, that they afforded but slight encouragement to any attempts whatever at displaying the human figure. The Egyptians, who have transmitted to posterity such stupendous

specimens of architecture, appear to have succeeded as little in painting as the Persians. The Etruscans seem to have been the only worthy competitors of the Grecian artists. It is, therefore, to the Greeks that attention must be directed; and it is in their efforts we must seek for improvement; their statues must ever remain the standards of excellence, and the purest models for study. Of their paintings we can only judge from tradition, and we must reserve our admiration for the splendid productions of the Italian schools, which have escaped the ravages of time. The learned may delight in rescuing from oblivion imperfect specimens of still more imperfect art; they may gaze with wonder and extacy at mutilated distortions, and sanctify unimportant efforts of early schools with the venerable name of *antiquity;* but the artist will do well to avoid useless discussions on topics of such comparative insignificance, and concentrate the entire of his energies in admiration and study of the magnificent relics of Italy and Greece.

We are desirous to impress upon the minds of our readers, that there is a more apparent and intimate connexion between the prosperity of the *arts* which embellish the social fabric, than superficial observers can understand, or are willing to allow. The greatness of a nation in a great measure depends upon those generous virtues and more magnanimous qualities which have their root in industry and love of country. These are the natural hinges upon which its character, and consequent security, eventually turn; but it cannot be denied, that without the cultivation of the Fine Arts, (from which is derived that genius which gives grace and elegance to the rude operations of industry, and embellishes the workshop of the manufacturer and artizan with the beauties of imagination and taste), a nation may be laborious, but it will never be polished;—it may be warlike, but it will never attain greatness;—it may become rich, but it will never be accounted elegant. In a word, the encouragement of the arts by a liberal and discriminate patronage, may be ranked amongst those minor duties which spring from an enlightened and generous patriotism. The cultivation of the arts gives a new spirit to commerce, and, concurring with morals, softens the manners of a people, and renders them more obedient to the laws that govern them:—

"*Virtute non armis fido.*"

It has been stated by some writers, "That in this country but little encouragement was given in the higher departments of art, and that portrait-painting alone received the patronage of the great." That such was the case some twenty or thirty years ago, we are aware; and we are also aware, that the nobility and gentry who extended such patronage, proved themselves more the enemies than the patrons of living genius. Such hostility, and indeed unnatural neglect, towards the merit by which they were surrounded, could not be altogether charged upon a want of that sensibility and good taste which are necessary to appreciate the works of the pencil. It had its origin rather in selfishness than ignorance, which we will endeavour to prove.

There were few noble families without collections of the works of ancient masters, which were acquired by accident, purchase, or hereditary transmissions. These collections they were accustomed to consider as valuable, scarcely upon any other consideration than that they were

filled with the productions of the Italian, Flemish, and Spanish schools of some centuries past. They were estimated by them solely as the works of *old masters*, and, in many cases, had little except their age to recommend them. These collections were, however, deemed valuable in another point of view. They were appreciated as a part (and by no means an insignificant part) of their personal wealth. Their fortunate possessors were always calculating their *(perhaps nominal)* worth, and had them surveyed and appraised as frequently as the timber on their estates.

Under such circumstances, it can scarcely be wondered at, that they should have been jealous of the encroachments of the modern pencil upon the value of their property. They dreaded its rivalry in the field of taste, and used every means to obstruct its progress of competition with the ancient masters. They feared that encouragement given to living merit might in some degree displace the old Masters, and diminish the value of their collections—their personal estates of paint and canvass.

Under these impressions they were inflexible to the numerous applications addressed to their patriotism for the purpose of stimulating them to encourage the rising talent of their native land. They would buy and sell, barter and exchange, among themselves; but would never suffer a living artist to obtrude into the sacred mansions of departed genius. The picture rooms of the great were no better than a sepulchre, into which there was no entrance but through the gates of death. Its jaws were seldom thrown open, unless to admit the tenant who had the hoar of centuries upon its face. With a few honourable exceptions, such was the state of patronage for the Fine Arts in this country about the commencement of the present century.

Notwithstanding the cold reception which living artists met with in those days, there were not wanting examples of many admirable professors, who, in spite of all impediments, perseveringly laboured to embellish their country with the works of their pencil, and to consult the interest of its future grandeur and elegance. Times have, however, changed; for amongst the high born and noble of the land, we now find many truly valuable and strenuous patrons of the arts; men of whom it may be truly said:—

"*Nobilitatis virtus non stemma character.*"

That there is a laudable desire to promote the best interests of the artist, was never more clearly exemplified than by the conduct displayed of late by the patriotic governors of the British Institution, who have for several years past supplied (in the most praiseworthy manner) a liberal contribution from their various collections, in order to form an annual exhibition which the public might admire and *the artist study*. By such means, the treasures of art which are to be found in the private collections of our nobility and gentry, are made accessible to all, and the public gratified by an annual, instructive, and pleasing treat. In the Exhibition of the present year (which is about to close), are to be found works of various degrees of merit. We do not think it equal to some of the former collections; but, as a whole, it is a good one. Among the best pictures in the collection, we may mention the following:—'The dis-

covery of Calisto,' and 'Diana surprised by Actæon,' *Titian*, from the collection of Lord Francis Egerton. 'The Flagellation of Christ,' 'The Virgin and Child,' and 'The Virgin dictating the Gospel to St Matthew;' the first a fine picture belonging to Lord Northwick, but we have doubts as to the last-mentioned being the work of *Raffaelle*. 'Portrait of a Spanish General in Armour,' *Velasquez*, and 'An Altar Piece,' by *Guercino*, both from the collection of Sir Thomas Baring. 'View of Dort, with Shipping,' *Cuyp*, from the collection of the Marquis of Lansdowne. 'An out-door Scene, with Figures,' by *P. D. Hooge*, sent by George Byng, Esq. Two very clever pictures from the collection of the Rev. J. Sandford, 'Scenes from the History of Joseph,' by Ubertini. 'The Advocate in his Study,' *A. Ostade*, from the collection of Lord F. Egerton. 'A Philosopher, by candle-light,' *G. Dow*, sent by the Hon. Colonel Fitzgibbon. 'Les Deux petites Marquises,' by *Watteau*, from the collection of H. J. Munro, Esq. 'A Woody Landscape,' by *Ruysdael*, from the collection of Sir T. Baring, &c. &c.

We might notice several other clever works, but enough has been given to show that a most liberal spirit for the advancement of works of art, is to be found among the noble and wealthy of the land. In another number we may give some passages from the lives of ancient and modern masters.

YOUNG AND OLD MASTERS.

Anch'io son pittore.—CORREGGIO.

OF the junior students of art who perform the pilgrimage to the Eternal City, it has been observed that an undue proportion are English; and the truth of this remark must have struck every sojourner in Italy. Certes, your English artist is of a species migratory, yet as certainly as his *Alma Mater* is in Italy, so surely is his *Propria quæ maribus* at home. The number of very young artists who perambulate the continent is exceedingly disproportionate to that of men of more mature study. If you enter the Bon Gout at Rome it is full of them; if you frequent the Café Doney at Florence you are surrounded by them; you find them at Bologna, improving and correcting in attenuated copies the legs and arms of some of Guido's fairest full-blown beauties, and even on the shores of the Adriatic, and in the city of the many Islands of Palaces, painting in the churches during mass, and yet complaining partially of the tenacious husbandry of the priests, and universally of the execrable Venetian living; they are seen in the gallery at Munich slopping in water-colour after the Vandykes, and in the Louvre after the Poussins. These numbers are continually changing their abode, and while the ordinary traveller marvels how so many can gather their bread in the temples of the righteous, his eyes are opened to the multitudes who seek in this precarious profession a competency which, without fame, is called disappointment in life.

Of the many that we thus meet, few do we ever see again; they seem to be lost like the bubbles in the stream. We may wait for years, and yet they come not. Perhaps one or two unforgotten names may be cast up on the dry legend of an exhibition catalogue, but with what trophies the bulk get out of the *mêlée* we never learn; the tablets, therefore, on which we may have written any names that seem to bear a fair promise become a sort of return of dead and missing. There are also many French students to be met with in Italy, but I have generally found that their purpose was one of solid benefit, as being capable of executing such copies as would profit them both in a professional and pecuniary point of view, having already studied perhaps years in the *ateliers* of such men as Vernet, Delaroche, or perhaps under Ingres, at the French Academy at Rome. Of these same French students the majority rise from the humblest grades of society, and they may be seen by scores in Paris working daily from the living model in the cheap *ateliers—au sixieme—* in the neighbourhood of the Pont St Jaques. Six in the morning is their hour, as long as there is light, and at eight the model rests half an hour. This time they employ in breakfasting upon, it may be, some bread and apples, followed by a draught of the nectar of the desert from the nearest fountain.

The genius of the affluent is never drawn out by necessity, but it is somewhat like Raleigh's jewelled doublet, distinguishing its possessors by the gems that occasionally drop from it. Many of the greatest names in art, in poetry, in what you will, are not those of men who have been reared in luxury, or even in ease, but of those who for the most part have been barely upheld by hope, while goaded on by grinding poverty till the waters of despair have reached their very lips.

The extraordinary number of artists of very mediocre pretensions may be in some measure attributed to the over-stocking of other professions. Education will do much in perfecting an artist, but before such education is begun there must be certain qualities to work upon, such endowments as no education could supply where they are wanting; for it is not enough for an artist to become celebrated that a fond and mistaken parent shall have said of him, "Let him be a painter." If a student possess not certain innate powers, never will his fame extend beyond the circle of his private friends; but on the other hand, possessed of the requisite endowments, no earthly consideration will bar his progress to celebrity.

As yet, the French classes are composed of students who have adopted art, as what they call their "etat," from strong preference; and they labour on under the pressure of want and every suffering that abides with poverty; whereas had they followed the unequivocal handicraft of their fathers, they might have been perfectly at ease with themselves each day, on the score of food for the following one. The corresponding classes of English students are, to a considerable amount, members of families which, at least, have the means of launching them in some avocation where success must, in some sort, attend mechanical exertion and ordinary prudence. The study of art is pointed out, not as the humble "etat," but as a "profession," and a galaxy of brilliant names

are quoted as worthy of emulation. It is not, however, recollected that very many of the men who bore them were, in their youth, without friends, despised, and unknown. When an artist has enjoyed for a series of years a felicitous popularity, his parental partiality often induces him to educate his son to his art, without reflecting that perhaps indigence, with all its ills, had been his own earliest and best preceptor. Study under easy circumstances rarely leads to supreme distinction in art, and nothing can more forcibly illustrate the anxiety and ceaseless toil of the mind of the genuine artist than the reply made by Benedetto Lutti, on his death-bed, to the affectionate consolations of his friends, who wished to cheer the dying man by telling him that he was still in the vigour of manhood, his age not much exceeding forty years. "You may double my age," said he, "for I have lived both night and day." Artists complain that they are too numerous in England, and this has been the cry since the days of Kneller; but in his time, patronage was not extensive, and pictures were seen only in palaces, and not as now in almost every house of tolerably respectable appointments; and where patronage is limited if artists be but few, they will yet be too many. I have alluded to the number of English students to be met with on the Continent, which arises from the position of their friends in society, a position decidedly differing in most cases from that of the connexions of the poor German or French student, who must achieve for himself the means of travelling. In the former case the artist is but yet in embryo, and incapable of judging of a work of art placed before him; hence the cry raised in France and Italy against the bad drawing of the English. There is such a thing as an artist being ruined by too early a visit to Italy (unless he go there to do that which might be as well done in England, namely, to advance himself in drawing), for it is rare that an artist will return to anything like class-study after having sketched from this and that master, and (from his inefficiency) even without discovering that some of the most celebrated Italian painters drew indifferently, especially those of the Venetian school: this is observable in even Titian and Giorgione. I remember, a few years ago, looking round the room called the Tribune, in the Palazzo Vecchio at Florence, which contains the group known as the Boxers, when I was told by a young Englishman, who had made a sketch of the figures, that he had come from London for that purpose, as he intended to paint a picture from the prisoner of Chillon, which this sketch would materially assist him to perfect. Many of our celebrated English artists never visited Italy; Gainsborough was one of these, and it has been questioned whether he would have been benefited by the tour, or have returned a copyist in style. Some of Sir Joshua Reynolds' friends remarked, on his return from Rome, that he painted worse than before he went thither, and he confessed to a private friend that he was disappointed in the works of Raffaelle, but he had not the hardihood to proclaim this feeling until after-years of experience taught him the value of those works.

The rage for the *cinque-cento* has of late been carried to an absurd extent by young artists, who are now within a little of returning to the doublet and galliard hose slashed with threeply velvet, and pinked with brave coloured taffeta; and every one whose chin is not yet garnished

with a hirsute fringe, "prays Jupiter to send him a beard in his next batch of hair." It is nevertheless agreeable to proclaim one's craft (*pars eorum sum*) by some external type; therefore these same beards "flashing like meteors in the troubled air," have become, not the free-masonry, but the outward sign, of the errant brethren of the palette, and it must be confessed that the hair *à la jeune France*,—*alla Ghirlandaio*, or scotched down like the heads of some of Deveria's pages or serving gentlemen, has given a slight tone to the time. This is however but a temporary intoxication; would there were no more sinking sins to eat holes in the reputation of artists. The poet Burns somewhere says that he found more real benevolence and modesty among a certain class of men who earn from the world the epithet of "blackguard," than among those who seek to sustain a fair reputation; and Lord Byron coincides markedly with the assertion of the mavis of Scotland. "Benevolence" there may be, there *is*, in short, associated with a host of thick-and-thin damning propensities; but of the other quality, I never heard before or since of a scruple of it being met with in such society; the poets may, perhaps, have spoken upon the principle of—*lucus a non lucendo*. After all, many vicious habits are adopted in imitation of those whose genius and fatal dissipation have rendered them alike distinguished and notorious; but genius, and either eccentricity or debauchery, do not necessarily go hand in hand; for to paint like Titian, it is not indispensible to drink like Morland, or swear like a satyr, and send to the devil, a hundred times a day, every thing an inch high and an hour old. These and other similar "accomplishments" are the agents of the same oft-tried desperate experiment inflicted on the toleration of friends, and producing in the end but the same result—the fearful conviction—that fortune is gone by, and will certainly never again come that way.

With respect to the criticisms of young artists, they are rarely just, inasmuch as they scarcely get beyond those points which are so embarrassing to themselves—drawing, touch, and colour; and which are generally dwelt upon last by the accomplished artist. As the faculty of subtle and discriminating criticism in art is matured only by the labour of a life-time, so the more extensive the experience of the artist, the graver to him is the subject. The study of painting, pursued as all distinguished painters have pursued it, is an onus of enterprise to which the most robust powers of mind and body alone are equivalent; and is one of those which has afforded too many examples of early exhausted vital powers, terminating in premature dissolution. It will be therefore understood that artists have but little time for self-cultivation; hence the *status quo* with which they have been illiberally reproached; thus, from a want of knowledge on the one side, and a want of power on the other, art, as a vulgar subject, is but little understood and comparatively but little broken in upon; not that much has not been written, but that very little has been well written. Something in the following spirit would be a modern critique on a work of an old master, supposing him to be a rising artist; *ex. gr.* take Rembrandt; and be the subject one of his least finished but most effective portraits—the colour laid on with, perhaps, a trowel, and softened with something like a whitening brush:

No. 109. *Portrait of Barneveldt Van Hogensluys.* Rembrandt Van Rhyn.—We only notice this production in order to express our surprise that such a work ever should have been admitted into the exhibition; if it be but an experiment upon the public taste, we would earnestly counsel all young artists to abstain in future from such dangerous caprices; if it be Mr Rembrandt's usual style of painting, we sincerely trust that he is independent of art, or if not so, that his friends will advise him to embrace some other calling; and so pass we on to No. 110, a bijou of a landscape by our old favourite Van Dunder Kopf, &c. &c. As art has been principally treated of, hitherto, by persons calling themselves amateurs, and the *laity*, it is highly desirable that the pen-productions of the brotherhood should be extended; for their literary labours have been exceedingly limited, while their numerical strength is legion. I have alluded to the imperfect education of artists, but instead of being impressed by a sense of the magnitude of this deficiency, how many are there who render themselves conspicuously ridiculous by what they would wish to be considered "eccentricities" of talent; and the conviction of error comes when the disease is no longer medicable. Of those who embrace the profession from the mere necessity of adopting some calling, thousands languish on, through their sear and yellow leaf, in bitterness and discontent, because simple qualifications are necessary for most professions, but compound ones are indispensable to make a distinguished painter. With certain endowments a man may become celebrated as an artist, without great industry; but without these same qualifications, no industry can carry down his name in his works. With respect to hereditary genius, it is true that the father of Raffaelle was a painter; as a *per contra*, however, to a few such instances, hundreds of living examples might be quoted; but I will shift my ground, and merely call to mind that the son of Cromwell was a driveller, the son of Henry the Fifth an imbecile,—and the son of Edward the First in every way unfitted to succeed his father. H. M.

ON THE ASTRONOMY OF THE BOOK OF JOB.

[*Lecture read by Mr Landseer at a Friday Evening Meeting of the Royal Institution of Great Britain.*]

It is somewhat remarkable, and not at all to our national credit, that our English translators of the Book of Job should all have mistaken the meaning of one of its most important passages. The more recent translators have fallen into two or three errors (which I shall presently explain), or have been led astray from the means of detecting those errors, probably by their wish to conform, as far as possible, to the version authorised by the common English Bible; and the translators of that Bible have in like manner been led astray from the truth by consulting Grecian literature, and bending before it with perhaps too much of habitual scholastic reverence, when they should have referred to astronomical planispheres, or the celestial phenomena, and to the practical

usages of the astronomers of antiquity. All has conspired—in the language of this divine work—to darken the wisdom which it were desirable to re-illumine, "by words without knowledge;" or, as has been paradoxically said of some of the finest passages of our own Shakspeare, to illustrate it into obscurity. Now, that everything which tends to throw light upon this admirable performance, must be most welcome, I shall not stop to argue.

From our learned Cambridge professor, Lee, whose recent publication, reviving my former reading, has attracted my attention to the present subject, and who a few years ago rendered the public good service by detecting, and very happily exposing, a hieroglyphical conceit of the late Dr Young concerning what he confidently, but erroneously, insisted was the phonetic name of the Egyptian King Psammis,—from this intelligent scholar we might rationally have expected closer examination than his predecessors had devoted to the subject, and at least an avoidance of the grosser and more palpable mistakes of former translators—mistakes which did not lie at any very considerable depth beneath the surface; but he has been more cursory and uncritical in this part of his task than might have been hoped for, however meritoriously successful in others. Dr Mason Good, who about twenty years ago put forth an excellent poetical version of this extraordinary book, with copious and learned notes, has, upon the whole, done the most toward liberating the truths of ancient science from modern English trammels, at least as far as respects the passage to which I am soliciting attention, yet without thoroughly understanding the subject.

Before we proceed further, it may not be amiss for my auditors to scan—I mean those ladies and gentlemen who may not have already perused them—the comparative view which I exhibit of the Hebrew original, the Bible translation, and the translations of Messrs Good and Lee, of the *passage in question, of which I conceive it will not be necessary for me to *recite* here more than the Bible version.

"The waters are hid as with a stone, and the face of the deep is frozen. Canst thou bend the sweet influences of the Pleiades, or loose the bands of Orion? Canst thou bring forth Mazzaroth in his season? Or canst thou guide Arcturus with his sons? Knowest thou the ordinances of Heaven? Canst thou set the dominion thereof on the earth?"

You perceive, ladies and gentlemen, that the Bible translators—erudite perhaps in languages, and learned it may be in religion, but careless or ignorant of ancient astronomy, and finding no word in Homer or Hesiod which they could construe into correspondence or synonymous meaning with Mazzaroth—(as they seem to have construed the Hebrew Kesil into the Grecian Orion, and apparently supposing that one constellation would do as well as another)—let the Hebrew word Mazzaroth stand in their authorized version. Had they been consistent, and done the same with Kimah and Kesil, English literature had not now been exposed, as it will be, to foreign animadversion and reproach; and unscholastic English readers had, perhaps, by this time been at no loss for the true meaning of these terms, instead of being plunged knee-deep—not to say up to the ears—in error; since, when we arrived at the sublime demand of the

* These were posted up in large characters behind the Lecturer.

Deity, we should have read in our English Bibles—"Canst thou compel the sweet influences of Kimah, or loosen the bands of Kesil? Canst thou lead forth Mazzaroth in his season?" Instead of which, the translators, as you perceive, reverting to their old Greek scholarship precisely where, from its irrelevance, it was not wanted, and was in fact obstruction, instead of illustration, have one and all given us, in the room of Kimah and Kesil, the Pleiades and Orion; and while Good has rendered Mazzaroth by "the Zodiac," the Cambridge professor has substituted "the Planets." Now, what could the author of Job—an ancient Arabian or Idumean poet, who is believed to have lived (by anticipation, I may perhaps be permitted to say—who may be demonstrated to have lived) long before the Greek legends were invented—what could he have known of Orion, or what of the Pleiades? Of Pleione and her fair daughters, and of the ridiculous story of Orion (or Urion) he must have been profoundly ignorant.

Aye, but (say the English translators) if we have given you the modern denominations of the constellations or stars named in the original, we have performed the proper duty of translators, our business having been to render English readers aware of the stars meant by the poet—their *names*, both ancient and modern, being quite a subordinate and very inferior consideration.

I reply—There we join issue at once. The very gist of my objection is, that you have *not* done so, at least in the instance of Kesil and Mazzaroth; but, instead thereof, have named stars which were so far from being those meant by the poet, that they have destroyed all the critical accuracy, and consequent beauty, of the passage wherein these names occur. And I beg leave to add, Messieurs Translators, that you have thus let slip through your fingers, the very passage which of all others would have scientifically sustained your genealogical and chronological argument concerning the long controverted era, or period rather, when the patriarch Job is believed or supposed to have lived, and his biographer to have written.

Permit me to prove this. In order to come at the precise meaning, we must retrace a line or two of the preceding context. In so tracing, you will probably find that the collocation of Mason Good is to be preferred, as being more homogenous or consistent with itself and with the tenor of the original, than either Professor Lee's or the Bible version. Good has—"When the waters grow opake as a stone, and the surface of the deep becomes fixed, canst thou compel the sweet influences of Kimah, and loosen the bands of Kesil?" Kimah is in this text very properly rendered the Pleiades, because, at the time and in the part of the world where the book of Job was written, the winter ceased, and the genial season commenced, when the Pleiades rose heliacally (or with the sun), *i. e.* to say, so immediately before it, that the rising of the solar orb extinguished their light in its radiance, This has before been explained, and is well understood by every person who is at all conversant with astronomy, Kimah, or the Pleiades, having been, at the far distant time of which we are discoursing, one of the (so called) "gates of heaven" [or Sabæan signs of the seasons]; through which gate, as the solar king of heaven annually passed, the supposed genial influence of

this beautiful astral cluster,—but the real invigorating influence of the vernal sun,—began to be manifested. So far, on this point, the translators are correct. The stars were the accredited celestial signs of the sun's arrival at the vernal equinox, and of the commencement of a new year, and were also regarded as the annual announcement of approaching abundance, at the remote era when the Book of Job was written.

But, in their explanatory comments, both Good and Lee consider the interrogation, "Canst thou compel the sweet influences of Kimah (or the Pleiades), and loosen the bands of Kesil (or Orion?" as they erroneously interpret the latter term,) as being in fact two questions, having reference to two meteorological or sidereal events, occurring, as they pretend, at opposite seasons of the year; and Good has accordingly placed a note of interrogation after each: whereas the question of Jehovah and of the poet is in reality but one; for though it treats of compelling the sweet influences, and loosening the bands, as being distinct propositions, yet are the two treated of as being of simultaneous occurrence, and as having reference to the cessation or breaking up of winter, at the reappearance of spring. The true construction of the passage absolutely requires this unity; and the two more recent English translators not perceiving this necessity, but fancying otherwise, have laboriously heaped up mountains of learned but untenable arguments (in the way of annotation), with which it behoves us not to allow our attention or reasoning faculties to be dazzled by the verbal glitter, or overshadowed by their astronomical darkness.

There is nothing more eclipsing to truth than specious semblances. The basis and summary of these gentlemen's arguments are—that the vernal renovation of nature announced by the rising Pleiades is, by the poet of Job, opposed to its wintry destruction, which latter is denoted or signified, as *they say*, by the rising Orion; they say, too, that these risings of the Pleiades and Orion occur at opposite seasons of the year, which not being true, a logical explosion takes place the moment the toad is touched with the spear of Ithuriel. Both the translators state, in substance, that the Pleiades, by rising [heliacally must be understood] early in the spring, brought on the fruitful season, which, being true, is readily granted. But when they add—the Cambridge professor, that Orion, by rising in the autumn, brought on the winter (which he professes to "believe to be the true explication," making use of these very words), and when the London physician subjoins that "Orion appears toward the end of November, through December, and a part of January, and hence becomes a correct and elegant *synecaoché* for the winter at large," we can only refer them, in refutation of their mistaken assertions, to the celestial globe or the celestial phenomena; adding, however, please to bear this in mind—that since all stars appear to rise and set, at every revolution of our planet, nocturnally for one half of the year, and diurnally for the other, translators or commentators should not offer to the public astronomical illustrations or explanations of this nature, without mentioning whether they mean cosmical, heliacal, or acronical risings or settings; for though it be true that Orion rises cosmically (or with relation to the world) at the season mentioned by these translators, yet it is not possible to suppose that the author of Job intended

we should understand the *heliacal* rising of the Pleiades and the *cosmical* rising of Orion.

Now, then, regarding these mistakes as sufficiently exposed and refuted, I return to my proofs, and shall here beg to submit what, in my opinion, the author of this remarkable text really meant by "Canst thou compel the sweet influences of Kimah, and loosen the bands of Kesil?"

It is the Chaldean or Sabæan system of astronomy which has dictated this sublime demand, proceeding, according to the poet, from Jehovah himself. It is the Chaldean system and the Chaldean practice, and the astronomical priesthood, who bore the name of Chaldeans—in the absence of such elegant and efficient optical instruments as we now possess—erected lofty pyramidal observatories, in order that they might see the rising and setting stars the more free from those misty exhalations which were apt to obscure the horizon bounding the marshy plains of Mesopotamia, or land of Shin-ar. I beg to repeat emphatically, that these primitive astronomers were sedulously observant of the rising and setting stars; by which I mean those which rose and set simultaneously at their given seasons and prescribed hours of sidereal observation, which latter were principally the crepusculum of morning, and the first emergement of the stars after sunset. Not possessing the advantages that modern professors of the science derive from our present superiority in mechanics, and proficiency in arithmetical calculation, they thus contrived that their observations to eastward, and those which they made to westward, should reciprocally correct any possible errors, and mathematically test and prove each other's accuracy. The important fact of these simultaneous and consecutive observations is expressly stated by Diodorus, and confirmed by Sextus Empiricus, who was no empiric, notwithstanding his name.

To understand rightly, then, the passage in question, we must see what stars were declining in the occident at the time when the Pleiades rose heliacally in the latitude wherein is the scene of Job's controversy with his friends; which latitude, as the patriarch had been plundered by the roving predatory bandits of Arabia and Chaldea, we cannot err much in stating at (about somewhere) 28° north.

Had our learned friends the translators thus contemplated their subject, and had simple recourse to their celestial globes or planispheres, instead of consulting their Greek and Arabic books, they might have spared themselves and their readers all that learned elaboration (which traverses, though it has not quite obliterated, the true path of research) concerning the "bands of Orion"—to whom this plural term bands does not at all apply, since that hero is represented with but a single band, which is commonly termed the belt of Orion; and they might still better have spared themselves all their erroneous assertions and reasonings concerning the rising of that constellation being the accredited sign of the commencement of the winter season, which, if they mean the heliacal rising, or if they have not been too careless or uninformed to distinguish between the heliacal and cosmical risings,—is so far from being the case, that Orion rises heliacally when the spring is only a very little more advanced than at the rising of the Pleiades; in short, his earlier stars within a fortnight of that remarkable cluster, instead of (as they assert) at the opposite season of the year. Our learned friends, too, by their

consulting their globes and planispheres, would have immediately seen that no bands merely figurative, and analogous to binding up nature in a state of sterility (as Professor Lee has it) were meant by the author; but that literal bands were meant—literal bands, locally proper to, and precisely descriptive of, the asterism Kesil; for they would have beheld—what? They would have beheld that, under these circumstances of the starry heavens—Antares, or the heart, with the tail and Sting of the gigantic Scorpius (a hateful, malevolent sign in the estimation of the Chaldean soothsayers) which then stretched through 60° (or nearly 60°) of the ecliptic — they would have beheld this ominous asterism descending acronically (or in the occident and opposite the sun) at the very time the Pleiades were rising orientally with the sun, and shedding sweet influence. To those who have attended to the figuring of the celestial asterisms I scarcely need add, that the whole body, tail, and Lesath of Scorpius consists of a succession of bands—like plate armour, or the banded shells of lobsters—studded with a succession of nine stars of magnitude, including the malefic Antares, or the Scorpion's heart, which is obviously in strict literal conformity with the language which the author has ventured to ascribe to Jehovah, and furnishes the true explication of this important text. I believe Bode's Uranologia is upon a scale sufficiently large for you to see these bands and stars from the distance at which you sit, gentlemen. [Here Bodus Scorpius was exhibited.]

Without any refinement or analogical elaboration whatever, then, these nine stars were seen to drop beneath the western horizon, one after another, as the Pleiades ascended. Yet there is also a certain poetical or metaphorical meaning, not unworthy of notice, as something more than a literary beauty, attendant on this sidereal occurrence, when combined with the employment of the Hebrew word (Kesil), as applied to the tail and sting of Scorpius, because that word radically means torpid, dull, stolid, and stands therefore in most pertinent juxta-position to Kimah, as the announcing stars of returning vernal invigoration and promisers of genial abundance. I would not (ladies and gentlemen) address myself to your enthusiasm upon an occasion where I want your critical attention; but to me, the harp of Orpheus is not more charming than the harmony of this text is admirable, both in its literal and analogical construction, when rightly understood, and applied to the annual reappearance of the sun in his genial mansion of Taurus. The poet, or inspired penman, who produced this extraordinary book of Job, has presumed "into the heaven of heavens," and drawn empyreal air!

But the translators—including those who supplied us with the version introduced into the common English Bible—as far as ancient astronomy is concerned, have but rendered that etherial purity unfit for spiritual respiration, or critical gratification, or mental pabulum.

I marvel not, O Sun! that unto thee
In adoration man should bow the knee,
And pour his prayers of mingled awe and love;
For like a god thou art; and, on thy way
Of glory, sheddest with benignant ray,
Beauty, and life, and joyance from above!

SOUTHEY.

[*To be concluded in our next.*]

AN ESSAY ON LIFE ASSURANCES, ANNUITIES, AND REVERSIONS.

BY A MEMBER OF THE UNIVERSITY OF CAMBRIDGE.

[*As a small portion only of the following important Essay appeared in the Polytechnic Journal when published in its weekly form, it has been thought expedient to reprint that portion here, that it might be more accessible.*]

The advantages of Life Assurances and its kindred objects have become generally known and appreciated, yet a knowledge of the principles which form the basis of all computations of this nature, though interesting to all, is confined to a few.

In accordance, therefore, with the plan laid down in our address to the public, we bring abstract science to bear in such a manner that it shall be as interesting to the great body of readers as it now is to its peculiar devotees; and we shall endeavour, in this and ensuing papers, so familiarly to explain the principles, experience, and practice of assurance in all its various forms, that every reader versed in the common rules of arithmetic, and in merely the elements of Algebra, shall be perfectly able to comprehend them, and apply them, when necessary, to actual practice.

The practice of Life Assurance is necessarily that of a people far advanced in civilization; it is now generally admitted that the latest experience of the Equitable Society furnishes the very best data yet existing whereon to found all calculations relating to financial operations, that depend upon the probabilities of human life. This becomes perfectly obvious to any one who considers for a moment that this body has transacted business on a much larger scale than any other society, and during a period of nearly a century, thus being enabled to furnish an immense mass of evidence as to the mortality of such as *do actually effect* Life Assurance, excluding altogether those fallacious cases that occur, in great numbers, in the registers that are kept of the mortality of whole towns and countries indiscriminately.

It appears that but little was done towards forming life contingencies into a science prior to the days of our own countrymen, Halley, Simpson, Demoivre (English by naturalisation), and Price. The investigations of these celebrated men have laid the foundations of the modern system of life assurance. Demoivre's speculations on these matters were, indeed, somewhat fanciful, and not conducted on such strictly correct principles as he was accustomed to when pursuing his brilliant career in other branches of the mathematics. But still he has given us many useful rules for estimating contingencies, which rules will be laid down in the course of these papers. To Thomas Simpson, in conjunction with Dodsley, also we are much indebted for observations on the mortality of London, as well as for several formulæ for approximate values of annuities, &c. But the subject assumed a more definite form under the hands of

Dr Halley, who not only gave us much desirable knowledge on the theory of probabilities, but constructed tables of mortality from observations made at Breslau, in Silesia, from 1687 to 1692. Simpson and Dodsley also made tables of London mortality during the years 1728 up to 1738; and Kerseboom, in Holland, from observations that had been registered during 125 years. Moreover, we have observations by De Parcieux, De P. Jeune, St Cyran, and Duvillard, the first deriving them from the Tontines, nunneries, and monasteries in France, and the others from various sources. Wargentin also formed tables after seven different triennial enumerations of the whole population of the kingdom of Sweden, in the years 1757-60-63-66-69-72-75, and to Sulmich, of Stockholm, we owe tables from the year 1755 to 64. Other tables of mortality were made from registers at Vienna during eight years; at Berlin for four years (1752 to 56), Brandenburg during 50 years (1710-60).

But Dr Price, availing himself of the records kept during forty-six years at Northampton (1735 to 81); during 30 years at Norwich (1740 to 70); at Holycross (from 1751 to 81); at Warrington (from 1773 to 82); and at Chester, by Dr Naygarth (from 1772 to 82); was the first to prepare such data as should be approved by both assurers and assured. These tables, called the Northampton, have attained a just celebrity through the civilized world, and are still adopted by the Equitable and other assurance companies.

Valuable, however, as were the labours of this philosopher and philanthropist, they have proved but a stepping-stone to greater accuracy. The mortality of a town cannot be fully ascertained by the most indefatigable registrar; besides which there are many places in which insalubrious trades or manufactures are carried on, which preclude their register being made the standard of life and death to the whole community. That no town can supply a just record of mortality is evidenced by many reasons; for example, take London. The metropolis is peculiar, compared with other places, in many respects. First, into it is pouring a continual stream of the very best lives, from the provinces and other countries, which circumstance makes the ratio of vitality considerably higher than it would otherwise be; but this vitality is further enhanced by the fact that invalids of all descriptions, whether originally from the rural districts or not, fly, in their last struggles for prolonged existence, to less artificial atmospheres. Then, again, numbers of the metropolitan population die prematurely from diseases incident to extreme destitution, from intemperance and irregularities scarcely known or heard of in small communities. London, then, for these and many other convincing reasons which might be adduced, would furnish but a very insufficient criterion as to the empire at large.

Strong proofs, also, have been advanced against the registers adopted by Dr Price as the basis of *all* calculations with regard to life contingencies; those proofs being founded upon smallness of population, inadequacy of period, and unhealthiness of situation. Indeed, before the committee of the House of Commons appointed

in 1829 to consider the case of life assurance and benefit societies, the evidence given by many actuaries and gentlemen of science, was, almost without exception, in favour of the tables of more recent date than those of Dr Price; Messrs Finlaison, Milne, Baily, Gompertz, Davies, Babbage, and Naylor, all declaring their opinion against the "Northampton Tables," as indicating much, nearly one-half or fifty per cent., below the real state of longevity. Messrs Becher and Morgan were, indeed, inclined to recommend the Northampton as best for use in the calculation of deferred annuities; but their reasons, which were not expressed, or at any rate not intelligible, inasmuch as a table that is true for one case, must be the only one for all cases, did not prevent the committee coming to the unanimous conclusion, that—

"The evidence is strong and decisive against the further adoption of 'The Northampton Tables of Mortality.'"

Tables of mortality have since been formed by Messrs Milne, Finlaison, Babbage, Davies, and Morgan, the three last having been made for the Equitable Society. But, having thus briefly sketched the history of the subjects of life contingencies, and described the tables of mortality that have been formed at different periods, the next thing to be done is to give so much of the theory of probabilities as is necessary for applying those tables to all the cases that occur or proposals that are made at Life Assurance Offices.

THE THEORY OF PROBABILITIES FOR LIFE CONTINGENCIES.

ART. 1.—*The probability of any event happening or failing is the ratio of the number of ways in which it may happen or fail respectively to the number in which it may either happen or fail.*

Thus the probability that an ace will be thrown with a single die is 1 : 6, 1 being the only way in which it can be thrown, and there being in all six different throws. Again, the probability of throwing 10 with two dice is obtained by considering how many throws there are in favour of that number, and how many there are in all. Thus the throws in favour being $6+4$, $4+6$, and $5+5$, and the whole number of throws being 6 times 6 or 36, the probability of throwing exactly 10 is 3; 36, that is one-twelfth of certainty. Hence the probability that 10 will not be thrown is 11 : 12 or eleven-twelfths of certainty. Consequently it is eleven to one against that exact number being thrown with two dice.

ART. 2.—Generally let h be the number of ways in which any event (called E) may happen, and f the number of ways in which it may fail, then by the definition of a probability in Art. 1.

$$\mathrm{H} = \frac{h}{h+f} \text{ and } \mathrm{F} = \frac{f}{h+f}$$

H and F denoting the respective probabilities that the event may

happen or fail. Since an event must either happen or fail, *certainty*

$$= \mathrm{H} + \mathrm{F} = \frac{h}{h+f} + \frac{f}{h+f} = \frac{h+f}{h+f} = 1;$$

that is, *certainty* throughout this essay, depending on the definition of Art. 1, will always be unit.

ART. 3.—From (2) it immediately follows, that

$$\mathrm{H} = 1 - \mathrm{F} \text{ and } \mathrm{F} = 1 - \mathrm{H},$$

so that whenever H or F is known, the other may be found.

ART. 4.—*Given* $\frac{h}{h+f}$ $\frac{h'}{h'+f'}$ $\frac{h''}{h''+f''}$ *&c. the probabilities of certain events E, E′, E″, &c., happening independently, to find that of their joint occurrence.*

Since each of the h ways in which the first event E can happen may be combined with each of the h' ways in which the second event E′ can happen, the number of ways in which both can happen is $h+h'$, and the whole number of ways in which both can happen or fail is, for the same reason, $(h+f) + (h'+f')$. Hence the probability that both events, E, E′ will happen is

$$\mathrm{H\,H'} = \frac{h\,h'}{(h+f) + (h'+f')};$$

H H′ being the symbol of the probability that both the events E, E′ will happen.

Similarly H, H′, H″ will denote the probability that all the three events E, E′, E″ will happen, and so on for any number of events. In like rotation F, F′ denotes the probability that both the events E, E′ will fail, F, F′, F″ the probability that all the events E, E′, E″ will fail and so on. Also H F′ the probability that the event E will happen and the event E′ fail, and H′ that the event E′ will happen and the event E fail. Hence it follows, from reasoning as above, and extending the notation, that

$$\mathrm{H\,H'\,H''} = \frac{h\,h'\,h''}{(h+f) + (h'+f') + (h''+f'')};$$

$$\mathrm{FF'} = \frac{f\,f'}{(f+h)\ (f'+h')}$$

$$\mathrm{FH'} = \frac{f\,h'}{(f+h)\ (f'+h')}$$

$$\mathrm{F'H} = \frac{f\,h'}{(f+h)\ (f+h')}$$

and the same reasoning and notation will apply for any number of *independent* events whatever. Hence generally it may be enunciated that

The probability that any number whatever of independent events shall happen or fail in any order is the continued product that each event has separately of happening or failing in that order.

ART. 5.—It follows also from the preceding method of reasoning, that the probability that both the events E, E′ shall not happen is

$$1-\frac{h\,h'}{(h+f)\,(h'+f')} \text{ or } \frac{hf'+fh+ff'}{(h+f)(h'+f')}$$

$$1-HH' \text{ or } HF'+FH'+FF'$$

that is to say, the probability that both E and E′ shall not happen is

$$1-H\,H' \text{ or } H\,F'+F\,H+F\,F'$$

the latter of which expresses the probability that either E will happen and E′ fail, E will fail and E′ happen, or both E and E′ fail, which is the same, evidently, as that E and E′ shall not both happen.

ART. 6.—The probability that both E and E′ will not fail is

$$1-FF'=1-\frac{ff'}{(h+f)\,(h'+f')}$$

$$=\frac{hf'+fh'+h'h'}{(h+f)\,(h'+f')}=HF'+FH'+HH'$$

or the sum of the probabilities that E will happen and E′ fail, that E will fail and E′ happen, and that both will not fail.

The negatives also of H F′, F H′, are respectively

$$1-\frac{hf'}{(h+f)\,(h'+f')} \text{ and } 1-\frac{fh'}{(h+f)\,(h'+f'}$$

which may easily be extended, by parity of reasoning, to similar results, for any number of events whatever, that are independent of one another.

It were easy to apply the foregoing formulæ to calculate the various probabilities at cards, dice, bowls, &c., but the object of this essay has a nobler aim than to promote gambling—that of enabling mankind to provide for their dependents after life instead of leading them to such habits as usually bring even themselves to destitution.

It was not before the end of the seventeenth century that the subject of probabilities was at all entertained, and then only in a few isolated problems that were proposed to Pascal, Hayghens, J. Beroaulli, and some others. Since then the theory has been applied to a vast number of important disquisitions by many of the ablest mathematicians, and in the hands of the immortal Laplace it became an instrument even of discovery in other sciences, as in astronomy, &c.

ON THE CONDUCTIBILITY OF HEAT IN METALS.

M. Perclet, distrusting the correctness of the usual method of determining the velocity with which caloric radiates through metals by means of ice surfaces, has adopted other means, of which (in a memoir addressed to the Academy of Sciences at Paris) he gives the following account:—

"Two cylindrical vessels were placed concentrically, one of 15 and the other of 30 centimetres in diameter, so lessened at their lower part as to be no more than 8 and 12 centimetres in diameter. The interval separating them was filled up with a ring of lint, and the interior vessel was closed with a circular metallic plate of the same diameter, kept at a distance from the bottom of the vessel by three small pegs soldered into its circumference, and fastened into the annular binding. The space between the two cylinders was filled with carded cotton. The interior vessel was filled with water, whose different layers we could mix by means of an instrument furnished with a great number of inclined wings, and on its axis having a long-tubed thermometer. This vessel was closed by four plates of glass. Below the metallic plate are two concentric cylinders, one of 8 and the other of 2 centimetres in diameter. This last was terminated at the top by a funnel, the limits of which do not touch the circumference of the exterior cylinder. The exterior tube was kept at a distance from the metallic plate by a long sealed band of taffety, strongly fixed about the tube and plate. In causing the vapour to pass through the centre tube, it blows uniformly into the funnel below the plate, and goes out through the interval comprised between the limits of the funnel and of the tube. The inclination of the funnel, its distance from the plate, and the distance of its contour from the exterior tube, had been calculated, so that the steam preserves always the same section.

"Here, however, we have the steps that follow in the observations. A great excess of vapour is caused to take place in the central tube placed below the plate. We shook the liquid regularly; and when its temperature was a little near 25°, we reckoned, with a chronometer which beat thirds of a second, the times required for renewing the heat every 5°.

"In admitting that the quantities of heat which traversed the plate were in the direct ratio of the difference of the two surfaces, the increase of temperature that would be produced during a second by a difference of temperature of 1°, would be given by the formula

$$a = \frac{m}{t}(\log A - \log T),$$

in which m is the modulus, A and T the excesses of the temperature of the vapour over that of the liquid at the beginning and end of the term t. Two observations would give a value of a, and the identity of these values deduced from different observations combined two

and two, if this identity existed, would establish the exactness of the supposed law.

"Next follow the results obtained by a piece of red copper of 11 millimetres thickness.

Temperatures of the Liquid.	Times of Observation.	Excess of the Temperature of the Vapour over that of the Liquid.	Time between two Consecutive Observations.
24°.591	7′.	75.409	—
30.74	8.49	69.26	121
36.89	10.55	63.15	135
43.03	13.5	56.97	140
49.18	15.34	50.82	146
55.33	18.25	44.67	167
61.48	21.58	38.52	196
67.63	25.55	32.36	233

"In determining the value of a by means of two extreme observations, we get a = .000744. The values of a deduced from two consecutive observations, are

".00077; .00073; .00078; .00075; .00070; .00073; whose mean value is .000752.

"The significant figures in the values of a deduced from two observations taken in a series, in the order 1, 2, 3, 4, 5, are 75, 77, 72, 76, 75, 72, whose mean is 74.5; 76, 73, 72, 76, 72, 76; mean 74.4; 76, 75, 74, 73, mean 74.5; 76, 74, 74, mean 74.5; 74, 74.

"The values of a, which differ little from one another, and the small differences which follow no law, may be attributed to the difficulty of ascertaining the exact instant when the mercury reaches the divisions of the scale, and to the cooling of the vessel; but they result from a more influential cause, which I shall presently describe.

"Analogous experiments made upon plates of thin leather, and on plates of lead, zinc, tin, iron, and brass of different thicknesses, have given similar results.

"The first law of the transmission is thus verified, at least for such metals as I have made experiments upon, and in the limits of the temperature of the observations.

"In comparing the values of a relative to plates of the same metal of different thicknesses, I was greatly astonished to find them sensibly the same, although for several metals the thicknesses had varied from 1 to 20 millimetres, and I doubted at first the accuracy of the law relative to the influence of thickness. But in all these experiments I had always remarked a very sensible influence arising from the velocity of rotation of the fan or agitator. The value of a had augmented and diminished with this velocity in such a way,

that in the same experiment it did not remain constant unless the agitation were very nearly uniform. Considering moreover that the vapour, in being condensed, must cover the lower surface of the plate with a layer of water nearly stagnant, it was not to be doubted that, in these experiments, the surface of the plate in contact with the vapour was not at 100°, nor the other at the temperature indicated by the thermometer, and that the heat had really traversed a metallic lamina comprised between the two laminæ of water, one of which was sensibly quiescent and the other changed but slowly; then, as the conductibility of water is very small relatively to that of metals, the influence of the conductibility of the metal disappeared.

"To verify this conjecture I suppressed the heating of the vapour; I filled the vessel with water at 0°, and plunged the plate, which closed it below by from 1 to 2 millimetres, into a large vessel which contained water at the ordinary temperature; I terminated the interior agitator with bands of hair-cloth, which, during the motion, should rub the surface of the plate, and the water which laved the exterior surface was renewed by means of a ribbon stretched vertically in a frame, to which a rapid swinging motion was given. By this arrangement the heating of the water was slow, and the liquid in contact with the surfaces of the plate was rapidly renewed. The co-efficients of the heating obtained with this new apparatus for leaden plates of 1; 2.5; 6; 9.5; 15 and 25 millimetres, were .00060; .00054; .00049; .00047; .00037; .00025. We perceive, by inspection of these figures, that the influence of thickness is very evident. Experiments made with plates of iron, tin, zinc, and copper, gave similar results; but the increase of conductibility, by lessening the thickness, was the more slow as the laminæ were thinner, and the metal used more of a conductor.

"Hence I ought to suppose that, by augmenting greatly the velocity of renewing the liquids which bathe the two faces of the plates, and by employing thick plates of metal which are slight conductors, we shall obtain co-efficients which are in the inverse ratio of the thicknesses.

"For that purpose I arranged a new apparatus, in which the interior agitator was set in motion by a system of toothed wheels, and the exterior agitator consisted of a horizontal wheel, excentercally placed as to the vessel and equally set in motion by toothed wheels, and whose spokes or radii were formed by traces strongly stretched, which, in the motion of rotation, rubbed against the exterior surface of the plate. By this arrangement the liquid in contact with the metal was renewed at least 1,500 times in a minute. In these experiments I heated the water of the vessel that was not quite closed near to 24°, and put into the interior vessel some water at the ordinary temperature. I perceived that the cooling of the vessel in air was altogether inconsiderable, by reason of the slight elevation of temperature and the carded cotton covering.

"Here I give the results obtained in two experiments made with

much care with two leaden plates, one of 20, and the other of 15 millimetres in thickness. Other circumstances remaining the same, the time of heating the same number of degrees were 500 seconds for the first plate, and 380 for the second, which latter number is only 5′ from $\frac{3}{4}$ of the first. Thus we may consider the law of thicknesses as directly verified.

"In these latter experiments the mean temperature of the bath was at 24°.04, varying but very little, and the excesses of temperatures at the commencement and at the end of the experiments were 9°.91 and 8°.55. Then the co-efficient of heating for the plate of 20 millimetres was .000294. The weight of the water contained in the vessel, augmented by the weight multiplied by its calorific capacity, being from 3.287 kilograms, the quantity of heat that would be transmitted over the plate for a difference of temperature of 1° would be $.000294+3.287=.000966$; and as the plate contained 50.26 square centimetres, the number of units of heat which would be transmitted, under the same circumstances, over a square metre, would be $.000966+\frac{10000}{50.26}=.192$, and for a plate one millimetre thick, it would be $192+20=3.84$.

"Then, admitting the ratios of conductibility of metals as found by M. Despretz, we obtain the following numbers for the quantities of heat which would be transmitted over the plates a square metre in surface, a millimetre in thickness, and whose surfaces should be kept at constant temperatures that should differ by 1°:

Gold - 21.28	Iron - 7.95	Marble - - - .48
Platina - 20.95	Zinc - 7.74	Porcelain - - .24
Silver - 20.71	Lead - 3.84	Baked Earth - .23.
Copper - 19.11		

"From the experiments of M. Clement, a square metre plate of copper, from two to three millimetres thick, in contact on one side with vapour at 100°, and on the other with water at 28°, condenses hourly 100 kilograms of vapour, which every minute would make 15 units of heat for a difference of temperature of 72°, and .23 for a difference of 1°.

"After the recent experiments of MM. Thomas and Laurens, in which the copper was arranged in a tube of small diameter, we have evaporated 400 kilograms of water each square metre, with a difference of temperature of 45°, which made 1.22 units of heat per second for a difference of temperature of 1°. The result obtained by MM. Thomas and Laurens is higher than that of M. Clement, because the copper being in the form of a tube of small diameter, the air was completely expelled, a circumstance which very much increased the quantity of condensed vapour.

"We perceive that, under the most favourable circumstances, the result obtained for the transmission of the heat over the copper, when we do not renew the liquid in contact with the surfaces, is

much less than that which has been described in this memoir, because of the sensibly quiescent layer of water which covers, at least, one of the surfaces.

"From what precedes, there result—

"1. A direct verification of the laws that are admitted as regulating the transmission of heat over bodies.

"2. The determination of the values of the co-efficients of the conductibility of metals.

"3. The important fact that, in heating by vapour or liquids with the apparatus generally employed, the nature and thickness of the metal have not any, or, at least, very little influence on the quantity of heat transmitted, and that we greatly augment the effective conductibility by rapidly renewing the liquids which lave the inner and outer surfaces of the vessels or tubes."

[The above experiments seem to have been made with great care, and are of immense importance to engineers and boiler-makers; we therefore hope that some of our practical men will verify them by experiments on a larger scale, and with thicknesses of metals in more direct proportions than those used in the experiments of M. Perclet.—Ed.]

ON THE CONSTRUCTION OF RAILWAY CARRIAGES.

Mr Coles, an ingenious mechanic, has lately been lecturing on the subject of railway carriages, having previously invented and patented plans by which friction is to be much decreased. Like most other inventors Mr Coles is most sanguine as to the advantages to be derived from the adoption of his method of construction. His statements, instead of being carefully considered, and their truth or fallacy demonstrated by argument or experiment, were treated only with ridicule and contempt by that portion of the press whose special duty it was to have given it particular attention.

As it is of the highest importance that railway carriages should be constructed in the best manner, we shall take up the matter, and *attempt*, at least, to lay down the general principles which should guide the builder.

The first object is undoubtedly safety. First; safety arising from sufficient strength in the construction of the carriages to prevent breaking down. Second; safety from liability to overthrow, from the accidental imperfections of the road, and from the centrifugal force consequent on travelling on small curves with great velocity. Now this safety has justly been considered attainable by constructing the carriages so that the centre of gravity shall be as near the

plane of the two fulcra as possible.* The means proposed for accomplishing such a safe method of construction are—

First—To have wheels of small diameter.

Second—To place the body of the carriage within the wheels, so as nearly to rest upon the axle.

Third—To bend the axle so as to lower the body still more. This plan is universally adopted in common carriages for common roads, and though not so in the construction of railway carriages, there is no sufficient reason why it should not. A very clever adaptation of this plan has been invented and patented by Mr Kollman, Organist of the German Chapel, St James's, whose plan is to make his axles in the general form of a hoop whose plane is vertical, the body of the carriage passing through the hoop.

Now we positively affirm that all these ultra-precautionary methods are unnecessary. The dangers of overthrow from *direct* obstacles are not likely to occur at all, and if they *were*, these precautions would be in vain. For the true danger is in the carriage getting off the rails, and not in the possibility of capsize whilst the wheels on one side a carriage are on the rails, and some obstacle lifting the other high in the air. We say distinctly that no such case has occurred, or is likely to occur; and the supposed necessity of these precautions, from the danger of an overthrow from centrifugal force in passing small curves of short radii at great velocities, is equally absurd. We well recollect that when Dr Lardner was examined before a Parliamentary Committee on a question of gradients, he stated his objection to long inclined planes, with a curve at the foot, to be his apprehension that the carriages would attain such a velocity that they would be thrown off the rails when they arrived at the curve at the bottom. The Doctor's fears were vain; Mr Locke had previously run down the inclined plane of the Liverpool tunnel with a train of carriages without using a brake, and yet he arrived in perfect safety at the bottom. Nay more, we ourselves have seen a train of coal wagons break from its moorings at the top of a plane half a mile long, and of very great inclination, then turn a curve of not more than 100 feet radius, and perform the remainder of its journey in perfect safety to itself, though a rope which dangled behind got entangled with a pulley fixed to a block of stone, pulled both pulley and stone out of the ground, and swung them with violence into a field whilst passing the curve. Coachmakers may therefore be assured that they may build railway carriages in

* It is very generally supposed that the most perfect *theoretic* plan of construction would be to have the centre of gravity much below the plane of the fulcra. If the only danger arose from a positive capsize from the wheels meeting some obstacle which raised those on one side of the vehicle much higher than those on the other, this would be true. But a railway carriage is more obnoxious to those overturns which arise from running off the rails when the centre of gravity is below the plane of the fulcra (points of support) than when *in* the plane. Witness the ease with which a pendulum can be disturbed.

such a manner as shall seem convenient, without safety being sacrificed, even when the centre of gravity is placed considerably higher than it now is.

The next point for the consideration of the coach-builder is this: Are not railway carriages made much too heavy, and unnecessarily strong for the work they have to do? We are very much inclined to believe that they are. When we consider the extraordinary disproportion between the load carried by a stage and railway coach, in proportion to their weights, we are convinced that there is either an error in the construction of the latter, or that they are preposterously heavy. We acknowledge that we can see no cause why there should be this difference, except that the railway coach is worked with greater velocity; and surely this is amply compensated by the extraordinary jerks and strains to which a stage coach is subject, and to which the railway carriage is not. Durability is of course an object, but lightness is an object likewise, for the expense of moving such a mass of material is so great that it would be well to calculate whether increased durability is not too dearly purchased.

We have used Mr Coles very ill. Like a Quarterly Reviewer, we have made him the peg on which to hang our own disquisitions without reference to our text. We repent us of the evil, and will make amends.

It is an undoubted fact that in railway travelling there are three obstacles to motion to be overcome by the power applied—

First—The friction of the moving parts of the carriage.

Secondly—The force of gravity when ascending an inclined plane.

Thirdly—The resistance of the atmosphere.

Mr Coles professes that he has discovered the means of diminishing friction to such an extent that on a level line the necessary tractive force is diminished in the proportion of *eight to one!!* To avoid all mystery, it may be as well to state at once that he uses friction-wheels; and really there is *some* saving, but what it amounts to we shall presently discover.

Two months ago we witnessed Mr Coles' experiments in his own shop. First we saw a model of a carriage which professed to represent those used on railways. This carriage being loaded so as to weigh altogether 168 lbs., required 3 lbs. over a pulley to drag it. Mr Coles then applied his friction apparatus, and 6 oz. were found sufficient for the same purpose. Upon this experiment Mr Coles founds his preposterous statement. Preposterous it is we shall presently prove.

A common railway carriage travelling at the rate of 20 miles an hour requires 1-224ths of its own weight to drag it along. The model which Mr Coles represents as that of a railway carriage in common use requires 1-56th! of its own weight to drag it along at the rate of *two* miles an hour only. There can be no doubt about the fact, for the statement is in his shop window.

Again, Mr Coles' *improved (?)* model requires 1-448th part of its own weight to drag it along at *two* miles an hour! If Mr Coles did common justice, he would compare the real work of a common railway carriage with that of his own—and would protest that his improvement reduced friction from 448 to 224, being the *apparent* improvement by the use of friction wheels—instead of which he compares his improvement with a model so badly constructed that the excess of friction at two miles an hour velocity is as 224 to 56!! the said model being (suspicious circumstance) made by Mr Coles himself.

We said that if Mr Coles did common justice he would say that he had made a saving of one-half instead of three-quarters. We now say that if he had common sense he would state his saving at much less. The railway on which Mr Coles ran his improved model is a finely planed solid piece of cast-iron! There are no flanges to his wheels!! The understanding of the reader is required to act as judge between ourselves and Mr Coles, and decide whether or not a considerable amount of friction ought not to be added to Mr Coles' account, in respect of the difference in quality in the roadway.

But we must take Mr Coles down a few steps more. The reader will recollect that Mr Coles' models moved at the rate of two miles an hour, and that those we compared it with moved at ten times that rate. Now everybody to the contrary notwithstanding, there *is* such a thing as atmospheric resistance, and that resistance is as the square of the velocity of the thing which it resists, therefore the atmospheric resistance on a common railway at 20 miles an hour is exactly 100 times as much against the carriage with which we have compared Mr Coles' model as it is against his. In order to make a proper estimate of Mr Coles' improvement, let us compare all the elements.

Let the whole amount of traction be represented by -	224 lbs.
To which must be added something for the difference of the *model* and real railway, including the friction of the flanges, which cannot be less than one-fourth -	56
	280 lbs.

From this must be deducted the amount of atmospheric resistance, which, being for the present unknown, we will call x. Therefore $280-x$ is the measure of the friction in a carriage on Mr Coles' principle.

And as the atmospheric resistance in the other case is 100 times more than in the above, the friction on the old construction will be represented by $448-100x$. Therefore if $280-x$ be less than $448-100x$, the difference will be the value of Mr Coles' improvement.

Let us find the value of x. During the experiments made by Dr Lardner for Mr Wood, on account of the Great Western Railway Company, it was found that a train of carriages ran down the

Whiston inclined plane at an equable rate of $32\frac{1}{4}$ miles per hour; now the inclination of this plane being one in 96, it follows that the total amount of resistance was 420 lbs. with a load of 18 tons; therefore the total amount of resistance was 1-96th of the whole weight at $32\frac{1}{4}$ miles per hour; and as at 20 miles an hour the resistance is generally reckoned 1 in 224, we have the elements for finding the amount of atmospheric resistance in each case.

Let x be the exponent of the atmospheric resistance in both cases, 224 the total amount of resistance at $32\frac{1}{4}$ miles per hour, 96 the same at 20 miles, and we have this equation—

$$224 - 32\tfrac{1}{4}^2 x = 96 - 20^2 x,$$

$$\text{whence } \frac{128}{640} = x = ,20.$$

The value of x being thus determined, the amount of friction due to Mr Coles' model stands thus—

$$280 - 2^2 x \text{ or } 280 - 4x, \text{ or } 279.20,$$

and that due to carriages on the old construction thus—

$$448 - 20^2 x, \text{ or } 448 - 400 x, \text{ or } 368.$$

Therefore the amount of saving by Mr Coles' plan would appear to be 88.80 in 368, or less than 25 per cent. only!

We have convicted Mr Coles of overstating the amount of friction of a common railway carriage 400 per cent., thus reducing his apparent superiority to cent. per cent.; we have shown that the real superiority is only 25 per cent., and that upon the friction only. What the saving of steam power really is we will now show.

The traction at 20 miles an hour we took at 96, and the exponent of x to be ,20; therefore $96 - 20^2 x = 16$, and 25 per cent. upon 16 is 4; therefore the saving of steam power is 4 upon 96, at a rate of 20 miles per hour; what it is at 30 and 40 miles we will not mortify Mr Coles by stating.

We ought to mention that we have taken the traction of railway carriages in common use at a much higher rate than the truth, but we determined to understate rather than overrate the truth.

We have broken a fly upon the wheel. It was necessary, not for the satisfaction of Mr Coles, or for his conversion either; not for the instruction of scientific men and practical engineers; but there is a class of well-meaning men, dabblers in everything, having shares in railways amongst other things, who are in the habit of giving their opinion upon matters they do not understand, and who are a perpetual blister on the back of the professional engineer; therefore, for the information of the well-meaning men aforesaid, and for the ease and comfort of those who have the management of railways, we have examined the foolish production of the noddle of Mr Coles, truss-maker, Charing cross, and inventor of "Coles' System."

[The reader will be pleased to note that we by no means guarantee the correctness of the data from which we have deduced the amount due to friction in the above calculations, The data are still so very imperfect that further experiments are absolutely necessary to arrive at just conclusions.]

OF THE SUPPOSED INFLUENCE WHICH THE ROUGHNESS OR SMOOTHNESS OF SURFACES EXERCISES UPON THE EMISSIVE POWER OF BODIES.

BY M. MELLONI.

In measuring the intensity of the heated rays given out by two sides of a metallic vessel filled with boiling water, having one of its longitudinal sides highly polished and shining, and the other polished in the first instance, and afterwards more or less ground with emery or lime, or roughened by other means, it is ascertained that the quantity of heat thrown out by the unpolished or marked surface is always greater than that which proceeds from the bright surface. These variations sometimes exceed the proportion of two to one. Hence it is deduced that the observed increase proceeds from the inequalities themselves, engraved on the surface of the receiver, and that consequently the superficial roughness of bodies has the property of facilitating the transmission of heat. It is my intention to communicate to the Academy an extract containing a series of researches, from which it appears to me clearly to follow that the proposition is altogether erroneous; so that, if the nature of exterior layers contributes undoubtedly to vary the quantity of heat emitted from a hot body, the state of the surface has nothing to do with the production of the phenomenon.

I must confess, first of all, notwithstanding the authority of great names, that the influence of polish in the emission of heat has always appeared to me very doubtful. It is said that the interior heat undergoes, on quitting the body, the same action on the surface as it does in penetrating it by means of rays. Be it so. But how is it that those little reflecting facits produced in engraving a plate of metal do reflect inwardly less heat than the polished surface of an even body? Take a receiver made of yellow copper, having two polished surfaces, and slightly tarnished by exposure to the air; draw upon one of these surfaces a number of parallel lines with a graver; the marks thus made will undoubtedly be more shining than the other parts of the vessel, and, notwithstanding, the surface thus furrowed by the graver will emit more heat than the smooth surface. About two years since I stated this difficulty, with some other experiments of the same kind, to MM. Bache, Henry, and Locke, very eminent professors of philosophy in the American Union, who were then at Paris. Now that the question appears to me to be no longer doubtful, I lay aside indirect difficulties, and state the results which lead at once to the proof of the fact which I advance.

I took a cubical copper vessel, the four sides of which were well prepared; I soldered on the outside of the angles and the corners of the bottom spring grooves, in order to be able to keep plates of the thickness of two or three lines exactly against the receiver. Having procured two pairs of plates, one composed of jet and the other of ivory, I applied them to the four sides. Each pair was perfectly equal in every respect, excepting the state of the exterior surface, one of which was very smooth and well polished, and the other unpolished and marked with emery.

In measuring with the thermo-multiplicator the quantity of heat thrown out by the two polished sides when the receiver was full of hot water, and in comparing them with that which proceeded from the two corresponding unpolished sides, I could only discover differences amounting to 100th or 200th, sometimes on one side and sometimes on the other. Those, procured from twenty observations, gave a variation which scarcely amounted to some thousandths, and which was consequently unworthy of notice. It might be here objected that, in spite of the precautions taken to establish the contact of the receiver with the plates, each consisting of a pair, and submitted to the same proof, we cannot be sure that they possess the same temperature. To remove this objection I had a cubic receiver hollowed from a small block of marble, the sides of which were reduced to a thickness perfectly equal. Their exterior surfaces were prepared differently. The first was smooth and shining, the second quite as smooth, but tarnished and unpolished, the third marked all one way, and the fourth in two perpendicular directions. The receiver filled with hot water emitted from the four sides the same quantity of heated rays. It is evident, then, that the regularity or irregularity of the surface has no influence upon the emissive power when the shining body is not composed of metal. I covered one of the surfaces of my marble receiver with black smoke, also one of the plates of each pair employed in the preceding experiment. The emissive power of smoke being agreed upon to be represented by 100, it is easy to determine by successive comparisons the proportional numbers which represent the emissive properties of ivory, jet, and marble. All these were comprised within 93 and 98. May it not then be affirmed that if, in the substances which we have just made use of, the influence of the unpolished surface is void, it is occasioned by the emissive power reaching the extent of the maximum, where an increase can scarcely occur, because the emitting surface no longer offers any impediment to the exit of heat; whereas in metals far removed from this extent the change in the state of the surface must necessarily exert all its influence, and render it evident by a very great variation in the quantity of heat emitted? Although this reasoning be founded on a pure hypothesis,—that is to say, that the black of smoke offers no resistance to the rays on the surface, and that, moreover, the emissive power of the three substances may be sufficiently distant from 100 to allow the changes produced to be estimated; and, on the other hand, so far powerful that the least proportion of a change happening in their value would make them overcome all the distance which separates them from this number; yet we will lay aside for the present the consideration of non-metallic substances, and we will endeavour to resolve the question with the bodies themselves, from whence it takes its point of departure. Copper, zinc, pewter, and tin, which to my knowledge are the only metals employed hitherto in the experiment which we have laid down in the beginning, being exposed to the action of the air, are quickly covered with a slight coat of invisible oxide, the pressure of which is very plausibly deduced from certain electrical phenomena. Now, it is well known that the transmissive power is much stronger in oxides than in metals. It might then happen that the marked surface, presenting to the air a much greater number of

points of contact, should throw out more oxide than the polished surface, and should thus increase its radiating power by the simple fact of oxidation, without the disposition, more or less regular, of the exterior surface having any part in the matter. In order to discover whether this argument could be sustained, I had only to make the experiment on gold and platina, and this I did; but the marked plates of platina and gold always emitted a much greater heat than the polished plates of either metal. The oxidation, also the influence of polish in non-metallic substances being discarded, what particular change in metals is there which can accompany in these bodies a greater or lesser overthrow of the outside layers? No other, in my opinion, than a change of hardness or of density. Indeed, jet, marble, and ivory are substances which are almost completely wanting in compressibility, or at least do not possess in a sensible manner the property of retaining *permanently* the modifications of hardness and density, which might be imprinted on them by the action of mechanical force; they, moreover, form themselves into plates without undergoing any pressure. Metals, on the contrary, are compressible; and the common plates which are used in trade are obtained, as is well known, by submitting the metallic matter to a very powerful pressure by means of the hammer. Experience proves, in short, that these plates are, with the wires, of a specific weight and of a greater hardness than that of melted metal. It has been said that this increase of hardness and density must be uniformly distributed upon all the points of the map. Is it not more probable, on the contrary, that, during the operation of hammering, the surface undergoes much more powerful pressure and condensation than any other part, and that the plate resulting from it is found positively covered with a species of crust of a greater hardness and density than that of the internal layers? This being premised, it is clear that, in marking the surface of the plate, some parts will be discovered more dense or more hard. Now, in casting a glance upon the tables which represent the emissive power of bodies, it is easy to perceive that these powers follow in general the inverse proportion of densities. Let us admit, for analogy, that the same rule is observable in the different states of condensation of the same substance, and we will then conclude that, in furrowing the surface of the plates, an increase of radiating power is obtained. Let us add, that the parts which compose the exterior layer, being taken off by the subdivision of their mutual contrast, must be taken down, and must thus acquire, by a diminution in density, an emissive power which approaches nearer than that of the softer layers of the interior. This being the case, it must follow; first, that polished plate of a given metal gives out a quantity of vapour so much the *greater* as the density or hardness of these layers is *less;* secondly, that, in the case of less density or hardness, the increase of heated power produced by the unpolished side will be inferior to that obtained when the plate is more dense. It is almost useless to add, that in order to verify these theoretical consequences, an oxidable metal of a slightly elevated temperature must not be made use of, because a plate constructed of these kind of metals possesses the tendency of increasing its emissive power, which varies constantly with the state of the exterior

layers, and so much the more so as these layers are more soft and divided.

A strong percussion, and a slow passage to a state of solidity after fusion, are the two methods by the assistance of which we are enabled to imprint changes on metallic substances of greater or less degrees of density. I had then two plates, made of the purest silver, powerfully beaten with a hammer, and two others melted, and allowed very slowly to cool in their moulds of sand. I formed them into a hollow rectangular prism, to which I added a metallic bottom. All these parts were united with soft solder, in order to prevent the alteration in their densities or their tempering during the operation. At the moment of uniting them, the four side surfaces were already well polished with pumice-stone, or with charcoal, without the use of the hammer or the burnishing stick. I then took some paper, laid over with coarse emery, and I rubbed hard one of the melted plates and one of the hammered plates, both in the same direction. The impressions of objects, which appeared very clear and very distinct on the surfaces upon which a fine polish remained, were completely effaced upon the rubbed surfaces, which became unpolished and covered with *streaks*. The silver receiver, being thus prepared, was filled with hot water. The four side-surfaces, successively turned towards the mouth of my prepared *thermo-electrometer*, produced on the *galvanometer* the following deviations :—

10° for the hammered and polished plate.
18° for the hammered and marked plate.
13°, 7 for the melted and polished plate.
11°, 3 for the melted and marked plate.

In comparing the four differences of temperature emitted, it is evident that first, as regards the polish, the melted metal gives about a third more than the hammered metal, which demonstrates the asserted influence in the least degree of density; secondly, that the effect of the *streaks* upon the two kinds of plates differs not only in intensity, as we have already seen, but in sense; because if the heated power of hammered silver receives an increase of four-fifths by the action of emery, that of melted silver, on the contrary, undergoes the loss of nearly one-third. This unexpected fact, which proves in an undeniable manner the truth of our fundamental proposition, is extremely easily explained in the theory which we have just been considering, because the pressure of a hard body, such as emery, upon the soft surface of melted silver, compresses and condenses in some degree the parts rubbed by it, and renders the lower lamina effected upon one of the plates harder than is the entire surface of the corresponding plate. I regret not having been able to operate upon gold and platina receivers, where these manifestations would, no doubt, be produced upon a more enlarged scale, on account of the great changes in density, which may be imprinted on both these metals by fusion and percussion.

In referring now to the first observations of Leslie, we see that the different metallic plates which he submitted to proof, gave him constantly a greater emissive power, being rugged and irregular, than smooth and

polished. After this, nothing appeared more natural than to admit into the phenomena of heated emission, besides the influence depending on the quality of the exterior layers, a particular influence due to their degree of polish, at least for metals. This was the conclusion drawn from the facts observed by Leslie . . . . . and yet this conclusion, to all appearances so simple and so straight-forward, was not agreed to.

This ought to prove an example which might serve to moderate the unfortunate facility with which experimentalists hastily erect into general laws the consequences resulting from their first observations. It often suffices to take an instrument in hand, and to make use of it in any research whatever, in order to pitch on some new fact; but in following up the work with assiduity, in varying the experimental methods, in analysing the phenomenon under different aspects, we almost always come to the conclusion that the novelty was only an apparent one, and that the true explanation is included in the truths already classed with science; or if, lastly, a new truth really springs up, it will almost always be found contrary to those supposed general laws, which at first struck us in so pointed and decisive a manner.

[As this paper, when presented to the Academy, produced no small sensation, we have thought it fit to present it as it stands to the English reader. In doing so we must guard ourselves from the possibility of being supposed to agree in the inferences arrived at by M. Melloni. This gentleman's method of experimenting in this case was so bad that really no conclusion can be drawn from his observations. The state of the thermo-electrometer undoubtedly indicated a certain thermometric state of the surface, but was no measure of the transmissive powers of the various surfaces submitted to that test. In order that this question may be fairly set at rest, we propose that the following method be employed in testing the radiating power of different metals of various degrees of density, smoothness, and polish. It is equally simple and certain. Let any number of cylindrical vessels be made, each of metal, differing in polish, smoothness, and density; immerse each in a separate cold bath; simultaneously fill each with warm water of the same temperature; at fixed intervals of time observe with the thermometer the temperature of each. Thus the transmissive powers of these various surfaces will be accurately ascertained. If it be wished to make a still stronger verification, it may be obtained thus: Let some of the vessels be polished both inside and out, others roughened on both surfaces, others rough on one side and smooth on the other. Now, whatever difference there be between the transmissive powers of rough and smooth surfaces, it must necessarily be doubled when both the external and internal surface is roughened or polished.

In making these remarks we have no intention of depreciating M. Melloni. We must, with all others, admit the great benefit derivable from these inductions; but it is doubly necessary that the experiments be not fallacious in their results. In our next Number we shall lay down a few data, derived from the experiments of

Messrs Perclet and Melloni, for the guidance of steam boiler makers, which, we hope, will be found of some advantage to practical science. Notwithstanding the great improvements which have been made from time to time in the construction of steam-boilers, there has been no system of data laid down which should govern the mechanic or engineer. There have been many isolated improvements in the construction of the furnaces, in the radiating surfaces, in promoting circulation, and so forth, but no attempt to combine all the advantages pointed out by theoretic and experimental philosophy.]

Note:—From the data collected from the preceding article and the one "On the Conductibility of Heat in Metals," (p. 38,) the practical man must be convinced that tubular boilers are the best that can be made for marine purposes. For as a tube or vessel subject to pressure must have its thickness in proportion to its diameter (the figure being the same), it follows, from the experiments, that less surface is required for producing equal quantities of steam, when *small* tubes are used than from large, thus producing a double saving. Neither of these writers has noticed another matter of immense importance as regards the construction of steam-boilers. We will put the matter in a "*questionable shape*" thus:—Suppose a cylindrical metallic vessel to be filled with boiling water, and closed at the top, its length being much greater than its diameter. Query, Would the water be reduced to its lowest temperature in the shortest space of time if the vessel stood upright, or if it were placed horizontally or at some intermediate angle; and if the last were the answer, at what angle? Perhaps some one of our readers, who may have facilities for making the experiment, will do so, and favour us with the result.

THE REVIVED ELIZABETHAN AND RENAISSANCE STYLES.

The taste for Elizabethan or old English architecture is now generally reviving in this country; to which, from its picturesque appearance, it seems well adapted. It becomes, therefore, a matter of some importance to know that the style of interior decoration should invariably be executed to accord with the spirit of the exterior design, and in the mode appropriate to the period.

It was during the reign of the Virgin Queen and her successor, James I, that this style principally flourished; but it took its rise as early as the reign of their father, Henry VIII, as the monument of Henry VII in the chapel of Westminster Abbey will prove. It was then that a growing taste for the classic monuments of ancient Rome arose in this country; introduced as it was by the artists

brought here from Italy, where the *cinque cento* style had already been developed with much elegance and beauty.

By degrees the purer Italian style seems to have changed into one of a bolder and coarser character, for which we are perhaps indebted to Flemish artists; who, deriving their principles of the art from the same source, varied it according to their national peculiarity of taste. In the one case the Italian style, with its more minute elegancies, was adopted in France, where it is called the "*Renaissance*." In the other, its bolder features took growth in this country, where it is now called the "Elizabethan." This latter is a style admitting of great beauty of detail with rich contrasts of colour, and is consequently much more appropriate to the damp climate of this country than the meagre tints of neutral colours so often employed. It is a style where carved enrichments, beautiful and picturesque in themselves, are relieved with gilding and colour, and splendid tapestry hangings on the walls; the stained glass not only giving light to, but truly illuminating, the apartments. The combination thus produced exhibits effects which may be opposed without fear to any modern inventions in decorations.

We have been induced to make these remarks in consequence of having seen the rooms lately constructed and decorated by Messrs Crace and Son, at 14 Wigmore street. We confess we were surprised and gratified to find the art in such a state of perfection. The effect of this suite of apartments was bewildering, the decorations being so different from anything we expected to have seen or had believed to have been executed in the present day. We entered a room fitted up in the "Elizabethan" style, the ceiling of which was divided into compartments, richly ornamented, wherein armorial bearings, badges, &c. were introduced. The walls were hung with imitation tapestry, and the chimney breast was panneled in oak, relieved with ornaments in black and gold, columns, pilasters, &c., in the centre of which was a carving in ebony from Albert Durer. From this room we passed into a corridor decorated in the late period of Tudor gothic; spiral columns, from which spring perforated arches, support a light tracery ceiling, which is illuminated with gothic arabesque on an ultramarine blue ground. The heraldic quarterings of the different English kings, &c. add to its richness, while suits of armour, trophies of armies, and various objects of taste and vertu, make it exceedingly interesting.

The next apartment, however, is the one most beautiful in itself, and that on which the Messrs Crace have exercised their principal care and attention. It is in this that is carried out, with all its beautiful effects, the delicate "*renaissance*" style to which we have before alluded.

As a decoration it is perfect, and must be entirely new to all those who may not have studied the subject with antiquarian interest. The ceiling, with its intricacy of detail, rich arabesques, and gilding, its gorgeous lantern of glowing stained glass,—the cornice and freize, with their delicate carvings and harmonious contrasts of

colour,—the walls, with their splendid arabesques, and hangings, and richly panneled dado, altogether produce a most beautiful interior decoration, unique of its kind in this country. It is not necessary, however, that this style should in ordinary cases be carried out to so high a degree of embellishment; a simpler treatment may easily be effected, and the true character of the period still preserved. Of this we have seen an example introduced by Mr Henry Kendall, jun. the architect, in the improvements he has lately made at Messrs Colnaghi and Puckle's establishment in Cockspur street, where the peculiarities of the style successfully preserve the two essentials of effect, harmony of colour and repose. The consequence is, that the magnificent collection of engravings and other works of art possessed by that house, are exhibited under proper influences.

We consider this branch of art requires encouragement in this country. A true taste in design and ornament is so essential to the prosperity of our arts and manufactures, that it cannot be too carefully fostered. Had the revival of this beautiful style of decoration taken place while George the Fourth was alive, the pure taste of that monarch would not have tolerated the monstrous anomaly to be found in the palace of Windsor,—a gothic castle with internal decorations of the time of Louis XIV.

THE ANCIENT NATIONAL MUSIC OF SCOTLAND.

BY GEORGE HOGARTH.

The great importance of what is called National Music, or, in other words, the popular or traditional music of different countries, not produced by regular composers, but handed down among the people from generation to generation, is now recognised; and the study and research bestowed upon it, by artists themselves, have greatly contributed to the progress of the art in modern times. Music, in the middle ages, like every other branch of learning, science, and art, was cultivated exclusively by the priesthood; and, in the hands of these erudite recluses—men dead to the world, and all its joys and sorrows, feelings and passions—it is not surprising that music, instead of being the language of nature, should have become one of the most abstract of the sciences, and, as an art, should have been employed merely in the solution of polyphonic problems—of stupendous complexity, indeed, and marvellous ingenuity, but wholly incapable of imparting any pleasure beyond that which arises from the conquering of difficulties. One would never have divined, from all the writings of those profound musicians, that such things as melody or expression existed; nor were they recognised as essential elements of the art, till artists issued from their closets and began to open their ears to the simple and natural strains of the people. Till within these three hundred years the artificial productions of the schools, and the songs and tunes current among the people, were as remote from each other as if they had belonged to different planets. And even when these melodies came to be noticed and adopted by musicians, they were considered inadmissible till they were accommodated with harmony for different voices. "The first secular music in parts," says Burney, "after the invention of counterpoint, that I have been able to discover on the continent, is the harmony that was set to the rustic and street tunes in the kingdom of Naples; and these, under the several denominations of *Arie, Canzonette, Villotte,* and *Villanelle, alla Napolitana,* were as much in fashion all over Europe during the sixteenth century as Provençal songs were in preceding times, and Venetian ballads have been

since. Besides the old tunes which were collected, and published in four parts, others were composed, not only by the natives, but *in imitation of these short familiar airs*, by almost all the principal composers of other places, of which innumerable volumes were printed at Venice, Antwerp, and elsewhere, under the same titles."

This was the beginning of a great revolution in the art, which, however, has been slowly effected, and, indeed, may be said still to be in progress. In the popular strains which he heard all around him—in the valleys, the woods, and the plains—a new world of melody was opened to the musical artist; and he now began to discover that harmonious complication was valueless unless as an accessory to beautiful and expressive melody. From that time to the present, melody has continued to assert her pre-eminence; and, while the composer has been gradually released from the conventional forms of the schools, which aid mediocrity but fetter genius, he finds that every day brings greater and greater demands upon his powers of imagination and invention, and his stores of fresh and unexhausted materials. It is this demand on the resources of composers that has led to the great and increasing use of National Music which distinguishes the composers of the present age. Those singular phrases or progressions of melody, which are peculiarly characteristic of National Music, are now becoming common in the most scientific works of the greatest masters. The works, in particular, of Beethoven and Weber, are full of them. Every amateur knows the exquisite effect of the original Turkish strain introduced as the march of the Harem guards in the *finale* to the first act of *Oberon;* and it may be added as a curious circumstance, that the subject of the allegro movement of Beethoven's second "Rasoumoffsky" quartett is almost the same as a wild Javanese air given in Crawford's 'History of the Indian Archipelago.' Numberless passages of a similar kind might be pointed out, drawn from every quarter of the world; but by far the most numerous are those which possess the features of the national melody of Scotland, which has long been an object of peculiar attention and interest to the greatest musicians of Germany. Indeed, the German composers, as well as musical literati, have shown themselves more familiar with the music of our northern neighbours than we are ourselves.

On the subject of Scottish music much interest has recently been excited by the discovery of an ancient manuscript in the Advocates' Library at Edinburgh, which contains a number of the national melodies of that country. The manuscript was bequeathed to the above learned body, about twenty years ago, by the late Mrs Elizabeth Skene, the last surviving member of the distinguished family of Skene of Hallyards; and appears, from evidence of various kinds, to have been in the possession of that family since the time of Sir John Skene, the author of the celebrated treatise '*De verborum significatione*,' who held a high judicial office in Scotland in the reign of James the Sixth. Having been lately examined by persons who understood the obsolete notation in which it is written, it was found to be a large collection of airs adapted for the *mandora* (a species of lute then fashionable throughout Europe); and a selection of them, in modern notes, has been published, with a historical dissertation on the ancient National Music of Scotland, by Mr Dauney, a member of the Scottish bar, and a distinguished musical amateur. The 'Skene manuscript' itself is only the *nucleus* of the work (a large and elegant quarto, published under the auspices of the learned body who possess the manuscript); its bulk and substance consist of Mr Dauney's historical and antiquarian researches; and we have no hesitation in saying that his inquiry into the history of Scottish music is by far the most learned, complete, and interesting, that has yet appeared.

Prior to the appearance of this "Skene manuscript" (the date of which, on apparently good grounds, Mr Dauney fixes about the year 1620), the earliest known collections of Scottish melodies were Thomson's *Orpheus Caledonius*, and the tunes to Allan Ramsay's *Tea Table Miscellany*, both published in 1725. Before that time, however, several Scottish airs were published in Tom Durfey's *Pills to Purge Melancholy;* and, indeed, the introduction of Scotch music into England may be traced to the union of the crowns under James the First, when, doubtless, they were carried across the Tweed by the Scottish Court and its followers. Shakspeare speaks more than once of Scotch tunes, and makes *Iago*, in his simulated jollity, sing two stanzas of 'Take your auld cloak about ye,' in which, however, the Scottish King Robert is

converted into the English King Stephen—a proof that, in this version, the song had already become popular in England.*

The only publication (as far as is known) of secular music in Scotland during the seventeenth century was a collection called 'Cantus; Songs and Fancies,' printed by John Forbes, at Aberdeen, in 1662. A great deal has been said about this book by all the writers on Scottish music, Mr Dauney included; but very needlessly, for it consists entirely of regular compositions for several voices, in the scholastic style of the day, when melody was little regarded, and music in parts almost exclusively cultivated by professors and amateurs of the art. There are, however, two curious publications of that age which show that it was usual to unite the popular tunes with *parodies* of the popular words, changing the subject from profane to sacred, for the edification of devout lovers of music. One of these, printed by Andro Hart in 1621, is entitled 'Ane Compendious Booke of Godly and Spirituall Songs, collectit out of sundrie parts of the Scripture, with sundrie other Ballates changed out of profane songs, for avoyding of sinne and harlotrie.' The other appeared in 1683, under the title of 'The Saint's Recreation,' compiled by Mr William Geddes, minister of the Gospel. Some of these parodies are ludicrously absurd. One of them, to the tune of "John, come kiss me now," *spiritualizes* the subject after this fashion :—

"Johne, cum kiss me now,
Johne, cum kiss me now;
Johne, cum kiss me by and by,
And make no more adow.

"The Lord thy God I am,
That, Johne, does thee call:
John represents man,
By grace celestiall."

And so forth. It is on a similar principle (though more decorously acted upon) that the modern Methodists have enlisted all sorts of popular airs in the service of religion; John Wesley having been of opinion that the Devil ought not to have the use of all the good tunes. Nothing, however, even in 'The Saint's Recreation,' is a match for some of the contents of a comparatively modern collection of spiritual songs, published by the Scotch sectaries called Bereans, in which we find a hymn to the tune of *Haud awa' frae me, Donald*, beginning thus—

"Haud awa', bide awa',
Haud awa' frae me, *Deilie!*"

The notion that Scottish melody is in any degree indebted to Queen Mary's unhappy favourite, David Rizzio, is now exploded among us, though it is still current among foreign musical literati. We lately met with an article by an eminent French critic, in which Rizzio's authorship of many of the existing Scottish airs is taken for granted. But this Italian lutanist could have been conversant only with the music of his own country, as unlike as possible to the simple and often rude

* The well-known tune, "Cold and raw," is found in Purcell's *Orpheus Britannicus*, introduced as the bass to an ode in honour of Queen Mary, the consort of William III. Hawkins's account of this composition is amusing. "The Queen, having a mind one afternoon to be entertained with music, sent to Mr Gostling, then one of the chapel, and afterwards subdean of St Paul's, to Henry Purcell, and Mrs Arabella Hunt, who had a fine voice and an admirable hand on the lute, with a request to attend her. They obeyed her commands. Mr Gostling and Mrs Hunt sung several compositions of Purcell, who accompanied them on the harpsichord. At length the Queen beginning to grow tired, asked Mrs Hunt if she could not sing the old Scotch ballad, *Cold and raw*. Mrs Hunt answered 'Yes,' and sung it to her lute. Purcell was all the while sitting at the harpsichord unemployed, and not a little nettled at the Queen's preference of a vulgar ballad to his music, but seeing her Majesty delighted with this tune, he determined that she should hear it on another occasion; and accordingly, in the next birth-day song (that for the year 1692) he composed an air to the words, 'May her bright example,' the bass whereof is the tune of *Cold and raw*."

strains which have been ascribed to him: and his attendance on the person of his mistress, while in this country, never could have given him any sort of influence on the national taste. Mary herself was Scottish by birth only. In education, habits, and feelings, she was a Frenchwoman; and such she continued to the last. Brantome, who accompanied her to Scotland, describes the agreeable serenade given her by her loving subjects the first night she lodged in Holyrood. "Estant logée," says this amusing old author, "en bas en l'Abbaye de l'Islebourg, vindrent sous la fenestre cinq ou six cents marauds de la ville, lui donner aubade de meschants violons et petits rebecs dont il n'y a faute dans ce pays-là; et se mirent a chanter pseaulmes, tant mal chantez, qui rein plus. Hé, quelle musique, et quel repos pour sa nuit!" John Knox, however, gives a different description of the scene. He calls Brantome's mob of *marauts* (blackguards), "a companie of most honest folke, who, with instruments of musick, and with musicians, gave their salutations at her chamber windo. The melodie (he adds) as she alleged, liked her weill, and she willed the same to be continued some nychts after with great diligence." Poor Mary, no doubt, listened "with sad civility and an aching head," and said such civil things as were expected: but Brantome knew her real feelings much better than John Knox could have done. Her education at the Court of France, where, among her other accomplishments, she acquired exquisite skill in the fashionable music of her time, must have rendered her sensations very much akin to those of Hogarth's "Enraged Musician," to say nothing of feelings of a deeper kind. *Her* music was unquestionably the Italian madrigals of Rizzio and the French *romances* of the equally unfortunate Chatelard (whose insane passion for his mistress cost him his life); and there is nothing in the occurrences of her life, which indicates the least approach to that sympathy with the feelings of the people of Scotland, which could have induced her to cultivate their popular music.

The speculations as to the origin of the Scottish melodies which have been so largely indulged in by musical historians and antiquaries—some ascribing them to David Rizzio, others to King James the First of Scotland—some deducing them from the music of the Greeks, others from the *plain-chant* of the Romish church—are all alike unfounded and unnecessary. Every people has—and must have had in all ages of the world—some species of popular music, originating among themselves, and depending for its varieties of character on a thousand diversities in the character, habits, degrees of civilization, and circumstances of the people among whom it exists. "It is probable," says Mr Dauney, "that some of our best airs have been composed during the short intervals of repose of a hardy and warlike people, who were almost incessantly agitated by fierce and bitter contentions. Much of it, also, may have sprung from districts where rumour 'of unsuccessful or successful war' seldom, if ever, penetrated. Indeed, so many of our fine national melodies carry with them the very echo of our mountains and waterfalls, our glens and our *loanings*; and the wild and artless notes of the shepherd's pipe are so often discernible in the sweet and plaintive succession of their sounds as, of themselves, to demonstrate that much of our music must have been the produce of those tracts of pastoral country which even yet cover so large an extent of Scottish ground."

It is a matter of curious remark how many national peculiarities, habits, and traits of character, survive the lapse of ages, and the greatest changes in the state of government, manners, and society. In respect to music, it may be observed, that the genius of the Scotch has always inclined towards *melody*, while the English have been chiefly inclined to *harmony*. England, comparatively speaking, has but a meagre stock of old national *airs*, but has always been rich in *part* music: and the people seem, from a very ancient period, to have been expert in this kind of performance. Giraldus Cambrensis, who wrote in the twelfth century, gives a description of the musical capacities of the people of our northern provinces, which is curiously applicable to them at the present day. "In the northern parts of Great Britain," he says, "beyond the Humber and on the confines of Yorkshire, the English who inhabit those parts, in singing, adopt a symphonious kind of harmony, but only in two different tones and voices—the one murmuring the lower, and the other, in an equally soft and pleasing manner, warbling the higher part. Nor is it by act only, *but by ancient use*, and as if now converted by nature into constant habit, that the people of those districts have acquired this peculiar faculty; for, so far has it extended, and such deep root has it taken, that *no melody is wont to be sung singly*: and, what is

still more extraordinary, the boys, and even those who are little more than infants (when they first begin to break out from cries into songs), adopt the same measure of singing." There is of course some exaggeration as to the proficiency of these infantine vocalists; but the general accuracy of the venerable author's description is above suspicion: and it is remarkable that the district which he mentions is, at this day, so pre-eminent for the cultivation of vocal harmony, that it has been called the Germany of England. Every town, nay, almost every village, has its choral society; and there is hardly a parish church of any considerable size in which there are not, in the course of the year, two or three oratorios, where the sublime compositions of Handel and the other great ecclesiastical composers are performed by a numerous band of voices and instruments, consisting of mechanics and rustics from the neighbouring villages and hamlets: and so conducive is this acquirement to the formation of sober and regular habits, that it is generally encouraged by their employers, some of whom put themselves to considerable expense in giving their work-people musical instruction. The immense choruses assembled at our great musical festivals are chiefly drawn from Yorkshire and Lancashire. In the southern parts of England this talent for harmony is less conspicuous: but still it is evident that harmony has always been the characteristic feature of the English music. One of the oldest pieces of vocal harmony in existence, the celebrated canon or round, 'Sumer is i-cumin in,' is of English manufacture: and it appears from many authorities, that the singing of roundelays, catches, and songs with burdens or choruses, has been for ages the musical pastime of the people. Many of these are still preserved; and, though they got into popular use, yet their artificial structure shows them to have been produced by persons who practised music as an art.

The wild and artless melodies of Scotland, on the other hand, took their origin from the "rude forefathers" of the people, among whom they have been handed down, from generation to generation, to the present day. Their preservation has been almost entirely traditional. If we except the new-discovered 'Skene Manuscript,' no collection of them was made till only about a century ago; and, indeed, their preservation, among the people of Scotland, is to this day in a great measure independent of published collections. The child still hears them on his mother's knee; they still lighten the toils of rural labour, give zest to rural happiness, and add to the innocent enjoyment of the cottage hearth. They are with the ploughman in the furrowed field, and with the shepherd on the lonely moor. The popularity of songs so universally diffused among the peasantry necessarily extended to the classes above them, their mutual intercourse having been closer and more intimate than is admitted by modern manners: and it is only in recent times that publications of Scottish songs have been necessary to keep them alive even among the more elevated ranks of society. "There are," says Sir John Hawkins, "no genuine copies of any of the Scottish tunes now remaining; they having for a series of years been propagated by tradition, and, *till lately*, subsisted in the memory of the inhabitants of that kingdom." But the worthy knight speaks in ignorance of the people of Scotland, and their manners and habits: and we will venture to affirm, that every genuine Scottish air, whose beauty has made it worthy of preservation, lives to this hour in the memory of the inhabitants of Scotland, and may be heard from persons to whom it has been familiar from childhood.

Though, therefore, we look upon the newly discovered manuscript as throwing some additional light on the state of music in the seventeenth century, yet we cannot, like Mr Dauney, consider it as having extended the boundaries of Scottish melody. Its chief value, indeed, in our eyes, consists in its having been the occasion of his excellent and important work. The national music of a country cannot be collected and preserved but by persons familiar with it from living among the people by whom it is sung. There are several great collections of Scottish music, formed by such persons who have taken the melodies from the mouths of the people themselves, and have been careful to preserve them in their native purity. Scottish airs have been sadly vitiated and vamped up by English composers for the London theatres: but there is not a shadow of reason to distrust the conscientious fidelity of those standard collections—(especially the *Musical Museum* of Johnstone, the *Scottish Minstrel* of Smith, and, above all, the *Melodies of Scotland*, the great work of Thomson), which are recognised as having fixed and embodied the national music of Scotland.

COLLEGE FOR CIVIL ENGINEERS.

We have much pleasure in inserting the following statement of Mr Curtis, Secretary to the proposed College for Civil Engineers, an institution which has our best wishes, and will have our warmest support.

OBJECTS.

1. *To give an education to future civil engineers.*

The importance of civil engineering, as a profession, demands a special seminary for the education of the youth destined for it.

Much is required of the engineer—with him nothing should be impossible: every new work committed to his charge calls for fresh exercise of ingenuity and knowledge. Is it not, therefore, absolutely necessary that the man, from whom so much is expected, should go through a sound, fundamental, systematic, carefully-arranged course of instruction—theoretical and practical?

Where can this be obtained, but in a well-conducted special scholastic establishment?

Much honour is due to the present race of civil engineers, who, with small means of knowledge, have, by the application of singular talent and ingenuity, executed wonderful works; but it cannot be denied that, had they had the advantages of such previous training as we propose to afford to our pupils, much time and money would have been saved.

But our course of education (*vide* Synopsis) is not only for the future civil engineers. It is so comprehensive, embracing, in addition to the professional parts of study, those studies of history, English and foreign languages and literature, which every parent would wish for his son, that the son of the manufacturer, landed proprietor, colonist, aye, and the son of the nobleman, might pursue it with infinite advantage.

Thus much for the need and benefits of such an institution;—now for the more particular consideration of the plan of the College for Civil Engineers.

1. As to principles of foundation. 2. As to formation of capital. 3. Government. 4. General form of organization and benefits offered.

1. PRINCIPLES.

The following are the principles, as may be gathered from the prospectus.

1. Open to all. 2. Based on principles of the Established Church; instruction given by the resident chaplain according to the tenets of that church, but facility of religious worship and instruction given to dissenters. 3. Recognition of public good alone; no possibility of individual aggrandizement. 4. All profits revert to college—to increase—to improve.

2. CAPITAL.

It is proposed to raise the necessary capital thus:—We invite parents intending to place pupils in the college to advance a certain portion of what they will have to pay for their sons' education and keep, in consideration of which, a very considerable reduction in charge is made.

We reject the mode of raising capital by *shares*, *debentures*, and *rent-charges*, as containing the seeds of dissolution.

By the mode adopted, or rather proposed by us (for I think the plan is novel), we give a large equivalent to the parent who advances, not in money, but in what to the parent is equal to money, and to us is not hard cash, but the commodity which we have for sale, and so raise a capital, giving a liberal return; but we are saddled with no debt—are controlled by no body of shareholders, sucking every quarter the life-blood of the institution, and hampering every attempt at improvement. Our hands are unshackled, our treasury unincumbered, every farthing of the profits is spent on improving and increasing our establishment, and we may thus carry our project to an infinite extent; for the more pupils we have, the greater the profit; the more the profit, the more extended the improvements and advantages; the more the advantages, the more the pupils; and so on *ad infinitum*.

3. Government.

Whole college establishment under personal superintendence of a resident director (Colonel Jackson most competent), who can be interfered with by no individual member of, but is responsible to, and receives his instructions from, the council of administration as a body. The council to manage—subject to the *control* of a court of governors, but not their *interference*—elected by the governors (after the five years) themselves. The governors are the contributors to the fund, and the parents of pupils, so long as those pupils remain in college.

Is not this judicious?

4. General Form of Organization and Benefits.

Instruction given *theoretically*, in *schools*, by class teaching of ablest professors.

Instruction given *practically*, in the *field* and *shop*, by experienced mechanics, &c.

Instruction *given* according to a judiciously arranged course.

Instruction *promoted* by a judicious system of rewards and punishments (no flogging!) short holidays, and *strict public impartial* examinations.

Instruction *assisted* by *Library*, *Museum*, &c.

Vide also regulations 8, 9, 11.

The charges are very moderate, considering the expensive nature of the education, and the present market prices are reduced in favour of the first hundred pupils, to whom a bonus of 90*l.* is thus given, and still further reduced in favour of the nominee or contributor to either of the classes. Bonus here additional, 76*l.*

As all profits revert to the college, the money paid by each pupil is actually expended upon his education.

The graduated table enables a provident parent to secure an education for a son, by easy periodical payments, during infancy; and, as the whole of the principal is refunded in almost every case, it is a savings bank: it has a peculiar advantage. Suppose a tradesman has paid upon these tables: his son is thirteen—he becomes bankrupt—his creditors cannot touch the money—for, in such a case, the council would refuse to return deposits for the child's sake. Is not this beneficial?

The wealthy, by becoming contributors of class 3, may benefit a less wealthy neighbour.

2. To afford theoretical instruction to operatives. The carrying into effect of this part of the plan must necessarily depend on the success of the main object, as also the vast premium to humble genius offered by regulation No. 22.

I really think that, if we carry out (as, if supported by the public, I think we can) our plans, we may venture to hope that our college may some day become the *Ecole Polytechnique*, not only of England, but of the world.

As public patronage must be given before we can commence, it would be a kindness to urge on parents the important consideration of early *registration* and *contribution*, viz.

The young men who first issue from our college (trained as they will, I trust, be, and great and greater as daily will become the dearth of efficient practitioners) will *command* employment, and good remuneration too.

As registration costs nothing, and the contributions will surely be safe with so respectable a council, let parents *register* and *contribute* without delay.

B. B. CURTIS.

SCHOOLS OF DESIGN.

We have the greatest pleasure in announcing our intention of allotting from time to time a portion of our pages to the consideration of these most valuable institutions. In a publication like The Polytechnic Journal, which proposes that *art* and *science* shall equally share its regards, the business of schools of design offers a source of the most interesting and important inquiry;—interesting, on the one hand, to those who are desirous of seeing the arts produce their refining influence on the tastes and habits of the people, and important, on the other, to the manufacturing world, from the commercial value which the instruction these schools afford is capable of imparting to the products of our national industry. We have

in schools of design the practical union of art and of science; and on this very account it is that, so far as their real value and utility is concerned, we feel almost disposed to assign them, in a country like Great Britain, a position more elevated than that occupied by such institutions as are exclusively devoted to the fine arts or to practical science.

The same views, we need not say, will lead us to advocate the right of the *industrial artist* to that place in the scale of merit which he deservedly takes in foreign countries, but which, unfortunately, either from his own imperfect education, the prejudices of the professors of fine arts, or the established habits of manufacturers, he has hitherto been unable in this country to obtain.

The first of these causes, we are happy to think, is now, by the assistance of government, and by the simultaneous springing up of schools in the principal manufacturing districts, in a fair way of being removed; and as for the second, we are persuaded that the talent which a right education must bring into play will convince artists not only that design for industry is not an inferior or degrading occupation, but that, if its scope be more limited, it requires the exercise of a taste as refined, of principles as elevated, and a skill of execution even greater than is necessary in works of fine art.

When we say that the established habits of manufacturers have been, or rather now are, a bar to the due estimation in which an industrial artist ought to be held, we do not mean to imply any blame on their part, because, in originally resorting to the continent for patterns or designs, they did so from the impossibility of obtaining them at home; and therefore the cause of the present system of pattern importation is traceable, in the first instance, to the inferior skill of British designers. But, unfortunately, the practice has tended to induce a belief that native talent is defective, which we are sure a comparative survey of the state of the arts at home and abroad must completely demonstrate to be a mistake. The great charm of the English school of fine art is its novelty; and we cannot for a moment believe but that, under right instruction, and with the opportunities necessary for its development, the same kind of original talent would be exerted in behalf of manufactures.

There is no more convincing proof of the commercial benefit which our schools of design are likely to produce, when they have had sufficient time to exert their influence, than the feeling of dread with which their establishment in this country is, we understand, looked upon on the continent. The surpassing skill of Great Britain in the invention and application of machinery for cheapening and increasing the power of the production of manufacture is, we believe, admitted to be unapproachable. Notwithstanding the efforts which have been made, at great expense, in Austria, Prussia, and even Bavaria, for spreading the knowledge of every new application of machinery, or process of manufacture, by polytechnic schools on a vast scale, England remains many years in advance in that respect; and we have heard that it has been said by a high foreign authority—"Let the English take the same pains to cultivate taste that we do to impart their mechanical dexterity to our artizans, and no nation will be able to meet them in the market on equal terms."

It is quite evident that such must ultimately be the case. Even at present, when it may be said that nearly the whole of our ornamented goods are manufactured from designs originally continental, the rapidity with which these foreign patterns, improved in fabric, are produced at a cheaper rate, and sent again to the continent of Europe, or other markets, makes it difficult for foreign dealers to enter into competition with British; and, even then, superadded to this manufacturing skill, the influence of an original and highly cultivated taste, the result feared on the continent must take place.

Before we conclude this short notice we cannot help saying, that we are by no means disposed to take so discouraging a view of the progress of British taste in design for manufacture, when compared with that of the French or Germans, as it has so much lately been the fashion to indulge in. Our schools have been established *because the want of them has been felt*, and not from any abstract original conviction of their expediency or utility; and this fact affords the most certain guarantee of their rapid influence, because the very demand for schools shows that the country has arrived at that state of refinement in which they are necessary, and before which they would have been of little general use.

The German schools date only a very few years back, and they are more for the purpose of improving the *mechanical* than the *artistical* qualities of manufacture; and the French, though they have been in operation for a century, did not, in the opinion of competent judges, begin to exert a decided influence till within the last ten years; so that we can hardly be said to be at that immeasurable distance behind the continent in these matters which some would wish us to believe.

We hope to resume this subject, and to bring before our readers such notices of the central and country schools of design, and the progress of art in its bearing on industry, as we shall deem interesting.

THE BUDE LIGHT.

REPORT OF THE COMMITTEE OF THE HOUSE OF COMMONS ON LIGHTING THE HOUSE.

The importance of artificial light, whether regarded in reference to its application to the various useful purposes of life, or as an element in philosophical research, is hourly increasing. A large portion of the time of all classes of society is necessarily passed in artificial light, whether engaged in the employment of profitable labour or in the enjoyment of social amusement. Artificial light, therefore, forms a serious item in the sum of human comforts, and the amount of national means expended in producing it becomes a question of political importance; whether we regard it in this sense, or look at its various and interesting phenomena in connexion with general science, or the useful arts, it appears a subject of considerable interest; and as many important improvements have been made, and are daily making, in the production of artificial light, and in its practical application to useful purposes, we shall enter fully into the subject of the nature, properties, and application of natural and artificial light in our subsequent numbers, confining ourselves however, for the present, to the Bude Light and the Report of the Evidence taken on it before a Committee of the House of Commons, just published, in which men of the first science of the day have given valuable and interesting information.

The Committee was "appointed to superintend the experiment of Mr Gurney to light the House, and to report to the House their opinion thereon." It appears that in 1834 a Committee of the House of Commons was appointed to inquire into the subject of *lighthouses*; the evidence before that Committee was important, connected with artificial light, as well as with the maritime interests of the country. Mr Hume, the Chairman of the Committee on Lighthouses, mentioned Mr Gurney's name to the Trinity House as a fit person to carry out the experiments recommended in their Report with regard to the "lime light," on account of his having first published it, and suggested it as applicable for lighthouse purposes, in the year 1823, in his 'Lectures on the Elements of Chemical Science,' which was printed in that Report. It appears, in this evidence before the Committee on Lighthouses, that Lieutenant Drummond, in 1827 (five years after), used the lime light with considerable practical advantage in the survey of Ireland. Mr Gurney was engaged by the Trinity House to bring this question to a practical issue; and in the progress of these experiments he discovered a powerful and more practical light, which is now adopted in lighthouses, and generally known by the name of "The Bude Light." The origin of this name appears in answer to question 105 in the evidence before the Committee of the House of Commons. When asked "why this light has been called the 'Bude Light,'" Mr Gurney says—

"The light is called the 'Bude Light' in reference to my residence in Cornwall, where the experiments were made; my name was associated with the 'Lime Light,' which I published in 1823, and this was called the 'Bude Light' at the Trinity House, by way of distinction. It is produced from oxygen and the flame of oil, or other inflammable bodies."

In describing the rationale of the light, Mr Gurney observes (page 1)—

"Ordinary flame is hollow, the exterior part only is ignited by the atmosphere;

the interior part is unburnt, containing the vapour of oil and carburetted hydrogen, having a cylinder or cone of flame round it."

"Are you speaking of an Argand flame?—No, a common oil flame. The 'Bude Light' is produced by oxygen admitted into the bubble or interior of flame. The oxygen strikes the nascent carbon and vapour of oil as it is distilled, and produces an intense light. The difference between that and an Argand lamp is, that one has oxygen in the interior and the other has common air. The Argand burner consists of two plates, films, or curtains of flame, one within the other; the common lamp has but one, and this constitutes the difference between the common ordinary lamp and the Argand."

"What do you mean by two plates of flame?—Plates, or cylinders, more strictly speaking. Two atmospheric flames, consisting of one on the outside and the other on the inside."

"And what between?—Vapour of oil and carburetted hydrogen between the two flames."

"Then the lamp as you have used it is an Argand lamp, with oxygen in the interior?—My burner consists of two flames also, but without common air in the interior."

"What is the form of the oil lamp you have used?—It is the form of a small Argand."

"Then you throw oxygen upon the outside?—On the inside. The outside or atmospheric flame acts as a retort in distilling the combustible matter. The light produced is from the vivid ignition and more perfect combustion of the carbon, and the quantity of light is in direct ratio with the quantity of disengaged charcoal."

Oxygen is obtained from the black oxide of manganese. In answer to the question, "Is the oxygen easily produced, and can it be supplied in large quantities in case of its being required?" he says "Yes, it can very easily be produced from the manganese mines in Devonshire, Cornwall, Warwickshire, and Cumberland, in large quantities; manganese has hitherto been used almost entirely for bleaching purposes, and there has been consequently a limited quantity in the market, and a limited search for it, but upon inquiry we find that there is an inexhaustible supply in Devonshire and Cornwall."

"What is the cost per cubic foot of producing oxygen from manganese on a large scale?—Taking the present price of manganese at from 8*l.* to 9*l.* per ton, taking the wear and tear of apparatus, the expense of fuel and attendance, it may be said in round numbers to be about 2d. a cubic foot."

"What acid do you make use of?—None; simple dry distillation."

"In iron retorts?—Yes; the expense of oxygen possibly may be reduced, as the manganese previously roasted may be used in the arts, and possibly for bleaching purposes, and in other ways."

"Are you aware whether a greatly increased demand for manganese would increase the expense of the article?—No; I think it would reduce it."

"How?—The manganese being limited in its use, occasions not exactly a monopoly, but it is in a few hands. I have made inquiries from some mine proprietors in Cornwall, and I think it may be furnished in London at an expense of 6*l.* to 6*l.* 10s. The price a good deal depends upon the quality; some ores of manganese are purer than others; some contain extraneous matters; some give 73 per cent., and some not so much.

"Every reduction in the price of the article would diminish the expense of the lights when brought into practice?—Decidedly; oxygen may be obtained also from the nitrate of potash, common nitre."

As the expense of this new light is a question of much interest, we give the following statement in Mr Farraday's evidence, as compared with wax lights:—

"An equal amount of light from the candle (three to the pound), requires 5·32 candles, and would consume in the twelve hours 1·2335 lb.; which, at 1s. 9d. per lb., would cost 26d. nearly.

"An equal amount of light from the candle (four to the pound), requires about 6·94 such candles, and would consume in the twelve hours 1·43 lb.; which, at 1s. 9d. per lb., would cost 30d. nearly.

"Taking the average of the two candle experiments as the best expression of cost at present, then that light which costs in the Bude lamp 10½d. will cost in sperm candles 28d."

On the comparative illuminating powers of candles of different kinds, much interesting evidence is given by Dr Ure. He says—

"In the first edition of my Dictionary of Chemistry, in 1820, I published an article entitled "Candles," in which I stated the result of many experiments upon the relative illuminating power of candles and various kinds of lamps, which tables have since been found to be exact by the results of other experiments. I have been, during the last three months, professionally engaged in investigating the cost of illumination of every kind of candles, and oil burnt in various lamps."

The cost of light is expressed in numbers 10, for stearine or German wax candles—6 tallow mould candles, 9½ cocoa-nut candles, 7 Palmer's tallow candles, 14½ spermaceti candles, 15½ wax candles, 33·6 grains of tallow, 31·2 grains of stearic acid, 44·8 grains of cocoa-nut stearine, 35 grains of Palmer's tallow, 30·4 grains of spermaceti, and 26 grains of wax, afford respectively the same quantity of light."

On the power of the Bude light he says (page 15)—

"Mr Gurney's larger Bude lamp, furnished with a wick of five-eighths of an inch, but emitting a white flame of only three-eighths in diameter, was found to afford 30 times more light than a wax candle."

The Committee report,

"No danger would be caused by the adoption of the proposed method of lighting." This arises from oxygen being incombustible; it is an eminent *supporter* of combustion, but not *combustible*, and it increases with great intensity the brilliancy of flame. The management of the light appears, from all the evidence, to be exceedingly simple. Mr Faraday observes—

"A man would have less trouble in attending to it than to an ordinary Argand lamp."

Much interesting evidence is given on Catoptric and Dioptric systems of distributing light. It appears that the Bude light is very small, and therefore can with accuracy be placed in ordinary optical instruments, so as to be distributed in any direction or in any quantities *without loss*. This is a property which no other light possesses, and seems the quality which renders it pre-eminent for lighting the House. The Committee report that—

"By this method of lighting the lamps are entirely insulated from the body of the House, so that the warming and ventilating of the House are not interfered with." This is a practical improvement in the system of lighting of considerable importance, where the effluvia, or heat, arising from the lights in the ordinary modes of illumination, is objectionable, as in a gallery of paintings, crowded assembly-rooms, or imperfectly ventilated drawing-rooms.

On the physiological effect of light there is much interesting evidence. Most of the scientific men examined agree in recommending ground glass as a pleasant and desirable medium for softening and diffusing light. Sir David Brewster, on the contrary, differs from them; he is asked—

"Do you think ground glass or coloured glass necessary?—No; I regard both of them as extremely offensive, particularly ground glass; I know, from my own experience, and that of many others, that the use of ground glass is most offensive to the eyes.

"How would you distribute the light?—Without concealing or modifying it in any way; and I am satisfied, from theory and experience, that the eye is less offended by looking at one brilliant light than by looking, for a long time, at the same light radiating from a number of distant points.

"You think that the light from an Argand burner is less offensive than if the burner is surrounded by a ground-glass ball?—Yes, much less; and the reason of that is, that the ground-glass ball consists of a number of luminous points, which are centres of action upon the retina. If you take a single light, and look at that single light, so that there is an image of it upon the retina, the effect of that light is to produce a physiological action upon every part of the retina. The nature of that action is to render the retina insensible to light of all kinds; to render it insensible to all kinds of rays, but especially the *red* rays, near to the parts of the retina immediately round the image, and less insensible at greater distances; the insensibility diminishing with the distance. A simple way of proving this to the satisfaction of every one is this, if you take a narrow strip of paper, and look at a

distant object at the same time that you look at the paper, you see two pieces of paper; the one on the *right* hand is the piece of paper seen by the *left* eye, and the one on the *left* hand is the piece of paper seen by the *right* eye. Those two pieces of paper appear equally white; but if you bring a candle near to the *left* eye, and even if it is not visible to the *left* eye (the light passing merely through the eyelids), it renders the image seen by the left eye *green*, the colour increasing the longer you hold the candle to the left eye; while the image seen by the right eye is of a beautiful reddish white colour, that eye being perfectly protected from the action of the light, while the left eye is under its influence, and is rendered insensible to the red rays of the spectrum.

"Upon the same principle, ought not the direct rays of the sun to be less painful than the rays of the sun diffused through clouds?—There is a limit to everything."

There are many new and important facts connected with light, lately noticed by scientific men; we shall, therefore, continue this subject in our forthcoming number.

RETURN OF MR ROBERTS FROM HIS FOREIGN TRAVELS.

Our friend, David Roberts, has recently returned from his Oriental *excursion*—so we shall now begin to term our steam-boat travelling—and has returned apparently a healthier and stronger man (we mean professionally as well as personally) than when he quitted his native shores.

Of strength he had need, for he has brought home with him the ponderous temples and colossal statues that adorn the banks of the Nile and the rocks of Arabia Petræa. The pyramids of Egypt are now in Mornington place.

Mr Roberts travelled southward as far as Nubia, and eastward as far as Baalbec. He has visited Geeza, Esni, Dendera, Philœ, Elephantine, Thebes, and Ebsambool; and will supply Europe—we may almost say for the first time—with portraits at once correct and picturesque, of their architectural and sculptured wonders. He satisfies us that Cairo merits its epithet of Grand, and Jerusalem that of Holy. The ancient, and now deserted metropolis of Petra, almost chiselled out of the native and yawning rock, he found in silence and in solitude; and the rich, and surprising, and almost superlative remains of Baalbec, partially displaced (as if by an earthquake) into picturesque and immense and highly ornamented masses. In short, probably no portfolio was ever more eminently "rich with the spoils of Time," and the treasures of ancient art.

A diploma from the Royal Academy of Arts greeted our travelled friend on his arrival. This is as it should be, the honour being reciprocal. Roberts brings to the Academy an accession of artistical credit and pictorial power, at least equal, in our ethical estimation, to the meed which he receives.

PROGRESS OF ENGRAVING.

As nothing has been of late years more remarkable in art than the wonderful and rapid progress made in the various branches of engraving, we shall at once open that subject to the readers of 'the Polytechnic Journal' as a question for monthly treatment,—which, apart from any disquisition of a purely artistical character, will involve notices and criticisms upon works either completed or in progress,—and receive such illustrations, whether of prose or verse, as may give them a tone of popularity and attraction to relieve the dry dullness of scientific detail. In pursuance of this contemplation, we have deemed it a duty in the outset of our career to visit the print galleries of our most extensive publishers, and not only to mark the "works of note" which have more recently adorned them, but to shadow forth to our readers the enterprize of the future and to open to them that "field of novelty" in which all "the public" are ever so ready and anxious to run and leap. And not to waste time in our journey to this "bourne of freshness green and gay," let us at once commence with a "meditation," by Messrs Colnaghi and Puckle, wherein they have embodied all the glories of the "TOURNAMENT of 1839." At this present writing, publisher and artist are in the sunshine of all the smiles at Eglintoun,—and the novel and gorgeous pageantry which is there enacting is gaining a reflex from the pencil of an eminent painter, who will present it, through the *burin* of the graver to all the absent wonderers about its most remarkable event. Though Mr *Tilt* is, perhaps, correctly speaking, the only man to publish a "*Tournament,*" yet the design in the hands of any one is a good design, and in the hands of Messrs Colnaghi and Puckle it is a good design in good hands. So we venture to predict that the subscribers to this "Tournament" will present themselves in very extensive "*lists.*" Apart from joke, however, we may state our opinion, that the subject is one which will make a series of very interesting pictures, well calculated for engraving upon a splendid scale. It is thus that the publishers have formed their design and their work, which will consist of a number of representations of all the principal scenes of the curious pageant: they designate it an "Illuminated History of the Eglintoun Tournament." From what we learn of the whole project, it must be one of the most interesting works of the time, and will have the advantage of being the only authentic one. Being printed in colours, and, in some cases, in colours blended with gold, it will reflect much of the sheen, warmth and gorgeousness of the original splendour, and will, of course, present every variety of glitter and device. Page after page will tell the tale of the Tournament, and unfold its imitative glories—magnificently as they *have* been imitated,—the processions—the tilting —the *melée*—the banquets—the ball—the combats, and the archery!

> Here grows the full procession—grandeur crown'd,
> Swelling with pride its glittering path along—
> Tossing its haughty head where all around
> Close the thick files of many a serried throng;
> The war-mailed knights that push their venturous way,
> Belted and armour-bound, like knights of old;

The burnish'd steel—the helmet plumed and gay,
Careering in the sun—the squires so bold—
And that most sweet of sunshines which doth break
From the bright eyes of ladies young and fair,
Bidding wild thoughts and stirring impulse wake
Enthusiasm's very spirit there;
The soul of woman's lustre-pouring glance,
That gives the gorgeous pageant half its light,
And more than stalwart strength or sturdy lance,
The triumph works of every tilted fight;
"The bannered host," &c. &c. &c.

But we might go on versifying for ever where the subject is so full, and therefore abandon the digression as likely to be too long-lasting. The theme, however, speaks for itself, and we may leave to the imagination of our readers the attractions which must of necessity crowd into such a work as an "*Illuminated History of the Tournament at Eglintoun.*" Two or three other "notes of preparation" were sounded to us in the establishment of Messrs Colnaghi and Puckle—one, the engraving of a yet unfinished miniature of the Queen, by Ross, who has already had fourteen sittings of her Majesty. This is a little gem on ivory, and, so far as it has gone, anything more sweet and beautiful we have never seen. The likeness of VICTORIA is exquisitely true; the whole meaning and expression of the countenance being perfectly interpreted. If the graver succeeds in preserving the character of the miniature, we shall have from him the most faithful likeness of our Queen that has yet been published. We noticed also, in a state of completion, a couple of good portraits of the Archbishop of Canterbury and Sir Edward Parry. We pass next to the establishment of Mr Moon, who has done much in promoting the progress of engraving in its best style, and whose works on the tapis are just now both numerous and important. We have but to name four subjects—the 'Grand Coronation Picture,' by Parris—the 'Queen's First Council,' by Wilkie—the 'Return from Hawking in the Olden Time,' by Edwin Landseer—and the 'Waterloo Banquet,' by Salter: this last is a most national and truly interesting picture, and should on every account be faithfully engraved. The subject is most inspiring. We have the true representation of the interior of the Waterloo room at Apsley House—its plate—its fine pictures—its costly presents—the gifts of kings to the conqueror of Napoleon; still more interesting, its living guests—the Waterloo veterans; the hero's old companions in arms, and, lastly, the venerable and venerated soldier himself, the great and honoured Wellington!

Here war-crown'd Wellington to-night
Sits with his warrior crew,
To keep within his battle-hall
The feast of Waterloo!

It is an after-dinner scene—the wine, the massive cups and goblets, and the dessert, are gathered upon the table, and the guests are grouped in knots to listen to their ancient commander, who has risen to address them. Wilkie's picture of the 'Chelsea Pensioners reading the Waterloo Gazette,' hangs in the room; and the magnificent shield of trophy, which symbolizes the achievements of the Duke, is not forgotten. All

the inanimate objects of the picture derive interest from some incident of victory.

> The meanest trifles therein of
> The world's most precious things,
> The virtue-trophies to the brave,
> The honour-gifts of Kings!
> Triumphs upon the very plates
> Are carved from which they dine,
> And every shining cup embalms
> A victory in its wine!

The artist, at the request of the Duke—who honoured him by permitting his presence, though a civilian, at the banquet—has introduced his own portrait. All the likenesses have in them a striking fidelity of expression, and the whole is a most glorious subject to engrave. The other subjects we have named are so far advanced that we have seen etchings of them. The 'Return from Hawking' is the most attractive. Within the court-yard of a fine domain it gathers beautiful groups of life; the lord of the land, a fair and noble lady, lovely children, a page, a falconer, horses, dogs, and birds. The picture, which, it will be remembered, was the attraction of the exhibition of its year, was painted for Lord Francis Egerton, and comprises the portraits of himself and family. It was originally intended as a companion to the 'Bolton Abbey,' but the etching strikes us as somewhat differing in size from the engraving of that truly splendid work. 'Bolton Abbey' itself is the most perfect production of art in our days. Landseer filled it with his genius. Who that has seen it can ever forget the grandeur of the presence of the Prior?

> Soulless! oh, no! Survey that stalwart form
> Up to the lofty brow; ay, scan the whole!—
> Like an old oak unshattered by the storm—
> He stands one vast embodiment of soul!
> And, wrapped in his own majesty of make
> And bearing, looks a type of lofty thought,
> High purpose not for less than God to shake,
> Yet scarcely caring for the deeds it wrought,—
> Holding the world as subject to his mind,
> Yet swoll'n with very fulness of its fame!
> In deed commanding, and in speech refined—
> Proud to the haughty, gentle to the tame!
> Project once formed, intent upon the end,
> Deeming the achievement as a work of duty;
> And, in that work, not deigning e'en to bend
> One glance on patient, youthful, blushing beauty.

The 'Return from Hawking' does not reach the full dignity of this subject, but is a singularly beautiful picture of a not unsimilar class, and gives full scope for poetical illustration, as we may some day undertake to prove. The 'Coronation,' by Parris, seems likely to make a very effective engraving. It records an interesting occurrence in a picture of good grouping and artist-like arrangement, and the architectural effects in the background are finely produced. The subject is chosen at the moment when the Archbishop is in the act of placing the crown upon the Queen's head, and around the Sovereign on either side are gathered the officers of state, the ambassadors, and the high nobility of the land.

The same sort of interest which attaches to this Coronation picture

will be felt in the engraving of Sir David Wilkie's painting of the 'Queen's First Council,' which, independent of its effective composition, has all the romance of the incident which it illustrates, to concentrate upon it the attention of the public. The Queen's demeanour upon all public occasions has been calm, lofty, graceful, dignified, and self-possessed; but in this—the first meeting with her Council—she was said to have borne a truly regal behaviour, which astonished those around her at the innate majesty of her mind, and which took a double interest from the fact of her being but a youthful maiden performing the first act of her Queenhood. The public prints of the day were loud in their praises of the youthful Victoria's bearing at her first Council, and bruited abroad the fact—

That she did nobly dare the first behest
Of her high doom. The Princes, Judges, Peers,
Gazed wonder-glad upon their Royal guest—
So proud in dignity—so young in years!
Gracefully lofty in her Sovereign state,
Yet mildly modest in her maiden mien!
The Council saw her blend with heart elate
The woman's gentle nature with the Queen;
And loud lips then did linger on her praise,
And warmest voices clamour of her worth,
And eyes of anxious hope the million raise,
To watch her bearing worthy of her birth;
Nor feared to be deceived—the gushing rill
Of popular love had swelled into a stream,
And from Old England's bosom poureth still
Upon her path to glisten and to gleam.

The incident which in a measure gave rise to this enthusiasm, and fed the first appetite of a nation's hope, was a good one to select, and will doubtless, when engraved from the portraiture of Wilkie, become a subject of confirmed popularity. By the way, as her Majesty is just now the theme of our thought and pen, we must not omit to mention the very beautiful half-length portrait of her, by Chalon, which Mr Moon has published lately, and which is indeed an exquisite print. A mezzotint of the Duke of Wellington, from the picture in this year's exhibition, also deserves mention. In noticing the various productions published by Mr Moon of late years, we believe we ought to atrribute to him the originating of a very excellent custom in regard to works of art, namely, that of getting them illustrated in keys, and frequently in poems, by authors of reputation and eminence. It is not unlikely that we ourselves may elaborate upon this system, and from time to time present our readers with illustrations of the best pictures of our day. In reference, however, to what we have said in regard to Mr Moon's encouragement of the connection between poets and painters, we cannot but adduce two worthy instances—one in which the Rev. George Croly described the print of the 'Maid of Saragossa,' and the other when Mr T. K. Hervey bestowed some sweet verses upon one of Wilkie's beautiful domestic pictures, entitled the 'Sick Lady.' In this latter a dying daughter is at the crisis of fate, and an anxious mother waits the physician's last decision. The picture is thus painted:—

A spirit wilder far than grief
Is in that mother's look:—
Oh! might she turn one single leaf
Of all fate's crowded book!

The unseen forms that haunt the room,
Shall they be strong to save,—
Or is that shadow, through the gloom,
The Angel of the Grave?

She gazeth on the cheek of pain,
And on the hectic brow,
Where fever-dew stands, thick as rain,
Upon the drooping bough:
Oh! *must* the lily break before
That wild, dark storm be done,
Or lift its pale, young head, once more,
To laugh beneath the sun!

Shall *she* to heaven go back to-day,
An angel to its goal,
Or reach it by life's winding way,
Earth's stains upon her soul?
Shall she soar upward, like the lark,
That in the morning springs;
Or wait until her day be dark,
And mount with weary wings?

Shall she repair the broken string
Upon her old guitar,—
And hear again her cage-bird sing
Unto the morning star?
Shall she rise up, to wander forth
Beside her garden-river,—
Or are the voices of the earth
Hushed to her heart for ever?

There is an exquisite and touching tenderness in this description which quite fulfils the whole effect of the line engraving, and it pleases us to discover this delicate and fine communion between poetry and art —between our best poets and our best painters. The example of illustrating with verses has also been extensively followed by Mr Boys, who has not been less busy than his compeers in the preparation of novelties. He has just issued, *par example*, a very beautiful print of 'The Cromwell Family interceding for Charles I," a companion to the 'Last Days of Charles I,' published a year back, and of which an illustration appeared in the *Times* newspaper:—

Impressive grandeur dwells around the place,
An awful scene that holds the gazer's breath,
Tranced by the spirit of its stately grace;
The solemn group that fills its "floor of death!"
The scaffold, that deep mourning covereth!
Where kneels—anon to die—the Martyr King,
Full glory shrined on his majestic brow;
A spirit pure, that spreads for heaven its wing,
Warms those mild eyes with holy lustre now,
And doth that calm and lofty solace bring,
Which leaves the monarch's soul past mortal suffering!
Oh! where are they who stained his name with crime,
And tarnished, with foul breath, his virtue high?
Lo! when it reareth now its front sublime,
Methinks they should be here to learn to die!
Cromwell! above I mark thy searching eye
Flash from the shadow'd casement of Whitehall,
Watchful, impatient, restless,—so look down—

Hear thy good King's last pious accents fall!
"I leave an earthly for a heavenly crown,
Where strife nor sorrow dwells; but peace for all."
Would guilt, O Cromwell! thus brave God's eternal call?

The print of 'Cromwell's Family interceding for the King's Life' is, however, more interesting, and will, we opine, be more popular, than that which described his death. The presence of two gentlewomen is a sweet feature in the picture, and the feeling it inspires is less melancholy and more grateful than that which rises out of the sadness of the melancholy execution.

Besides the establishment of Mr Boys, there is another great publishing house in Golden square, which just now does not lack activity. We allude to Mr Parkes, the clever and spirited successor to the late Mr Bowyer, who has nearly completed a magnificent engraving—the size of 'Bolton Abbey,'—of Charles Landseer's picture of the 'Pillage and Destruction of Basing House." It is an elaborate work with some beautiful grouping in it, and creative of a warm sympathy for a very fine old man—the Marquis of Winchester and his fair daughter—who are the chief personages of the picture. The whole forms a very fine *tableau*. But what we would principally call attention to in the establishment of Mr Parkes, is the scheme of putting within the pale of public competition that magnificently illuminated copy of the Holy Scriptures which the late Mr Bowyer employed so many years of talent, perseverance, and industry to complete. This truly beautiful and most interesting work, which contains, within forty-five noble folios, no less than seven thousand engravings and original drawings, presents in itself an exhibition better worth examining than any gallery of the season; and an opportunity for its inspection is now publicly afforded at the establishment of the proprietor. It is, to our mind, a subject of equal reproach and regret, that a great national work of this sort should not be in the possession of any of our great institutions of learning—that the British Museum should be a single day without it—or, if any miserable deficiency of funds in that establishment have put it beyond the compass of its treasury, then that the Bodleian at Oxford, the proper library for so noble and unique a copy of the Scriptures, should suffer it to pass into any private repository of learning and art. Such, however, is the case, and we now find it tendered to the world in shares or chances, by a sort of ballot of twenty-five guineas each, and to the extent of a hundred and twenty-eight in number. By way of lightening the risk, each losing subscriber will get twenty-five guineas worth of books or prints from the establishment of the proprietor; no small inducement to subscribe, when we find such prints as the 'Basing House,' the 'Russel,' the 'Lady Grey,' the three beautiful episodes in the destinies of Mary Queen of Scots, of which the last and loveliest is yet unpublished, and fifty others of equal popularity and note with those published ones which we have named.

We have not space to continue, for this month, our notices of novelties; but we only omit including the works of Mr M'Lean, because we have resolved to devote a separate article to 'Nash's Old English Mansions,' a publication too splendid to be dismissed in a current review.

A CHAPTER ON CHIMNIES.

Joint-stock Companies have frequently been the fashion and sometimes the *rage* of the day. Lately, however, so much has been lost in railroad speculations, that money is playing a game of bo-peep with experimental projectors. There is plenty of it in existence, no doubt, but not much in circulation; a fact which is to be ascribed to the unfavourable nature of sundry accounts-current recently published by the directors of various undertakings, wherein the debtor side, having gone the "whole hog," has far outstripped its sober and modest neighbour, the creditor. In a state of things so unpleasant as this, it behoves every individual anxious for the monied prosperity of the country to make known any scheme for the employment of capital which is of a promising and "entirely novel" kind. Believing that we have got just such a scheme in our head, we hereby make it public for the benefit of all whom it may concern.

With the exception of the information contained in Mr Monck Mason's entertaining book, we think that very little good has hitherto been done by the invention of balloons. Like the freaks of the bill-stickers who daubed Mr Webster's big play-bills all over with whitening because he would not subscribe to the terms of their "Company," they are very amusing, but by no means useful. Now if we could point out a plan, by an adherence to which these monsters of the atmosphere could be made, not only extremely agreeable but extremely useful too, we think we should deserve well of the community at large; firstly, because any one who invents a new pleasure merits the thanks of the world generally, and of his own country particularly; and, secondly, because five *per centum per annum* is an interest rarely to be met with in cases where the capital is safe. Our plan proposes to pay at least ten per cent.; not out of the capital, as some of the railroads do, but out of the *bonâ fide* surplus in the shape of interest; and with this cheering promise, by way of preamble, we come at once to the substantive part of our project.

If a balloon, capable of taking up a hundred persons at once, were harnessed to the earth by a rope or chain of a quarter of a mile long, no doubt can reasonably be entertained that thousands would go up daily. We have consulted Mr Green on the subject, and have fully convinced that enterprising aeronaut of the practicability of the thing. By firmly screwing a heavy crane to the top of Primrose hill, round the barrel of which the required length of rope was twined, a balloon might gradually be let into the air at a rate of speed little exceeding that of the pile-driving monkey. This very deliberate ascent would produce sensations altogether new and delightful. Primrose hill would be crammed with persons anxious to have a ride in the atmospheric omnibus, and large sums of money would be taken daily when it once became generally known that

individuals might be "craned" into the air five times as high as St Paul's, and then craned down again with perfect security, and all for sixpence! Some people may laugh at this project, and think we are jesting. No such thing. We have long entertained an opinion that the speculation would be extremely profitable. Indeed we have every reason to expect that the proprietors of Vauxhall will carry it into effect before long, unless some enterprising Company-monger shall meanwhile step in, and make it the basis of future operations for the Stock Exchange.

Let us suppose the thing done,—(this is no great difficulty, for it will most assuredly be done some day,)—and then let us imagine ourselves seated in a car at the full length of our tether, just at the moment the god of morning throws his first beam upon the concave firmament above us. What shall we see? A glorious sight.

Spread all around, in every form of verdant beauty, we should see the green carpet of earth spangled with trees and flowers. Immediately beneath, a magnificent city would exhibit its thousand spires, its ample streets, and its dew-pearled parks with their miniature lakes. Traversing the landscape and the town, a silver river traces the glorious outline of nature, where ships of all nations, reposing upon its waters, cluster about the city like bees around a hive. Darkness is giving place to light. The bat-winged wizard of sleep begins to loosen his hold. A solitary husbandman crossing the fields, or a single vessel dropping down with the tide, give token of returning animation. The cock crows his morning defiance, the cattle shake the dew from their sides, the lazy maid rubs her eyes, and the milk-woman begins her walk from Islington to Aldgate. The pregnant air, fresh from the hardy north, fills the hale lungs with health-begetting motion. Now is the time for breakfast. Our balloon is provided, as it ought to be, with necessary appliances, and we sit down to a repast of tea and coffee, eggs and ham, &c. with all the new feelings which a suspension between heaven and earth (after the fashion of Mahomet's coffin) may be supposed to create.

We have scarcely begun, when lo! a dark spot appears in the distance upon the bosom of Old Father Thames. We stop for a moment to say that "Old Father Thames" is not our own invention, and we only wish to take credit for what really belongs to us, which is, the merit of happily adapting so beautiful a description to the wants of this part of the present article. On the bosom of Old Father Thames this black spot becomes larger and plainer every moment! 'Tis one of the imps of darkness, a limb of the ubiquitous genius of SMOKE, and he approaches in the shape of a steam-boat with a brown tail of eight hundred horse power. Annoyed to see the fair face of nature begrimed with the "multiplied and multiplying masses" of the murky cloud, we turn for consolation to the city below, but here we are not much better off. St Paul's has tolled five; 'tis the signal for servants-of-all-work to get up, and some of them actually *do* get up at that hour. Presently one

or two chimnies, then a dozen, then a hundred, give proof that the fires in the grates below are kindled. Up to this point, however, no serious impediment in the shape of smoke has been opposed to the enjoyment of our breakfast. As yet, the houses where it has been generated are few and far between; but if we would avoid mixing the increasing and ascending carbon with our food, we must make haste and gobble up what remains, for not a moment is to be lost. We gobble it up accordingly; St Paul's strikes six; the hundred and forty-four thousand houses of London are beginning to unite the proceeds of their chimnies in one thick coal-impregnated mist, to which the steam-boats impart a deeper tint of darkness; the streaky mass comes slowly up; already half the town is hid from our view, and the distant country is fading from the sight; a little longer, and the scene is closed; spread in one dingy pall, the accumulated smoke hangs like a vampire from the clouds; if we stay where we are much longer we shall be choked; we give the signal, the crane gets to work, and down goes the balloon.

In our passage to earth a new object of interest and curiosity comes upon the sight. When nearly on a level with the tops of the houses we take a bird's-eye view of the Chimney Pots. Gad o' mercy, what a scene! "Variety is charming," says the proverb. The proverb, however, would never have been made if the manufacturer had seen the chimney-pots of London. There are at least a million of the most grotesque things upon earth on the tops of London chimnies, and they are of a million different shapes. The world has nothing to compare with them for "charming" variety. Gladly would we prolong our gaze at this extraordinary collocation of indescribables, but the inexorable crane, though slow, is sure. A minute more and we are wound down to *terra firma* again, from whence we must make the rest of our observations.

In the late architectural improvements of the metropolis, much care has been bestowed upon the exterior construction of chimnies and chimney-pots. Efforts have been made to give an air of finish to the houses by the adoption of means somewhat in keeping with the buildings themselves, and so far as they have been left by the architect and builder, little fault was to be found with their general appearance in this particular. But the moment they became tenanted matters were quite altered. Let us take as an example those very pretty rows of houses known as Wilton crescent. Before any inhabitants were therein, all the chimnies and chimney-pots were alike: now what are they? It is almost impossible to say. On one house there is a long zinc pipe, stuck upon the top of a chimney-pot, which resembles nothing so much as the funnel of a steam-boat exploded out of its place. Close beside it, a less aspiring red clay cylinder is covered with a tin cowl, having a shining fox on three legs to turn it round. At the next house, a couple of black-leaded monk-looking pots are stuck together on the chimney, each having two arms pointed downwards; and further on are to be seen a multitude of objects in the air not much unlike the curious figures

which a telegraph describes when at work. In fact, the houses of Wilton crescent, and of all London, are covered with the most unsightly objects imaginable in the shape of short and tall pots of every colour and material, some with one arm, some with two, and some with three; some with cowls, some with caps, some with crowns, some with brickbats across, and some with tiles. Now what is all this horrible disfigurement for? The London Directory will best answer the question.

If anybody will take one of Robson's or Pigot's Directories, and turn to the "Classification of Trades," he will find that the aggregate number of masons, bricklayers, builders, blacksmiths, stove-grate manufacturers, surveyors, and architects is Nineteen hundred. Every one of these individuals professes to cure smoky chimnies, and no doubt a great many succeed in doing what they profess to do; but it is a notorious fact, that although the whole body are of opinion that all remedies for smoky chimnies must be applied to their tops, no two of them will agree as to the precise means to be adopted when they get there. There are consequently just as many ways of curing smoky chimnies as there are professors of the art itself, always supposing that each professor adheres to his own plan. Such, however, is by no means the fact. Different constitutions require different treatment: Smoky chimnies are like the faces of sheep; no two are exactly alike; *ergo*, no two chimney-pots can be similar. The final result is, that the variety of chimney-pots corresponds exactly with the number of chimnies. If there were less private prejudice, and more public spirit, among these gentlemen than we find to be the case, we would suggest to them the propriety of incorporating themselves into a joint-stock company for the purpose of ornamenting instead of disfiguring the chimnies. We could point out various ways of doing this. In Parliament street, for instance, the smoky chimnies on one side the way might be considered Whigs; those on the other Tories. Taking this as a postulate, what a glorious opportunity does it not afford for exercising a fanciful imagination! A picture of the House of Commons engaged in some interesting debate might easily be formed, by fixing a revolving cowl over every pot, with a tin or zinc effigy of a member upon each. When the wind blew from the west, the Whigs, who would be on the *right* side of the way, would turn round and look at their opponents manfully; these latter taking care at the same time to show their backs, a compliment which the others would return when an easterly wind compelled the Tories to "right about face." In like manner the tops of the houses in Albemarle street might give a spirited representation of the Master of the Horse out with his steeds; Fleet street would do capitally for a pack of hounds in full cry; Adam street would be an appropriate situation for representing the temptation of Eve; Paternoster row for a procession of nuns; Oxford street for a convocation of gowns-men; Wigmore street for the House of Lords; Mincing lane for a school of young ladies out walking; Holywell street for old-clothes

men; Blackfriars for a procession of monks; and—but stop; we think we have said enough to convince the individuals alluded to, that the elements of success for an association of the kind proposed are already in existence at the chimney-tops.

We suggest this plan, not as any improvement in principle, but solely as the institution of a better practice. We fear it would be useless to develope any principle whatever to joint-stock companies; but if, by accident, such a *rara avis* may be found as an architect or a builder who would listen patiently to an exposition of *fact*, in direct opposition to every thing he has been taught to consider truth on this subject, and if, after listening patiently, he would endeavour to discover by experiment whether what we told him was right or wrong, we should entertain some hopes that a thorough reform in the matter of chimney-pots would ultimately take place, and that no occasion for the chimney ornaments we have indicated would thereafter exist.

Smoke is a compound of carbonic matter and gas. The draft of air which rushes up a chimney when a fire is in the grate, carries with it all the gas and a large portion of the carbonic matter, in other words, *soot*. Some portion of the soot is, however, deposited in the chimney during its passage upwards, the rest goes away with the gas, and it is this rest which gives to smoke its hideous colour and deleterious quality. If the whole of the soot were deposited before it left the chimney there would be no smoke at all; or, at most, nothing but a slight, thin, gaseous vapour, scarcely visible to the eye, and containing nothing of a contaminating nature. It seems a most unaccountable thing that no part of the wonderful discoveries made in England by the aid of science has hitherto contributed towards the abatement of the noxious influences continually exercised by the huge mass of undigested smoke which the chimnies of London daily vomit forth, and that we shall have to trust to German skill for the invention of means to counteract the evil. Three small books are lying before us on this subject. One is entitled 'Questions relating to Fires in general, the Draught of Smoke, and the Saving of Fuel;' a second, 'Warming and Ventilating Buildings, according to a newly discovered law of Nature;' and the third, 'Certificates' given to the author of the previous works, who is Mr F. A. Bernhardt, architect and honorary member of the Polytechnic Society in Leipzig.

It is not our intention to prolong this article by entering into any critical examination of Mr Bernhardt's claims to be discoverer ofa "new law of nature." We are saved that trouble by the book of 'Certificates,' one or two of which we shall presently quote. But we cannot refrain from calling attention to the first "question" put by Mr Bernhardt on this *smoky* subject. He asks—

"What are those fundamental scientific principles, according to which all construction for fires, without any exception, may be executed without previous experiment, in the manner best adapted to their intended purpose?"

Does anybody understand these "fundamental principles" *we*

ask? "Oh, yes," replies each of the before-mentioned nineteen hundred architects, surveyors, bricklayers, masons, stove-grate manufacturers, &c., "I do! The fundamental principle is at the top of the chimney, and not at the bottom. Look at every newly invented CHIMNEY POT."

Knowing what we do about "Certificates" generally, *we* place little faith in documents of that nature. The following, however, are out of the common way:—

"By his Majesty's command this testimony is given to the architect, Mr F. A. Bernhardt, that he has remedied the inconvenience of smoky chimnies in the royal palace, as well as in private houses, although all former attempts to do so have proved ineffectual.

(Signed) "V. SHUCKMANN,
"Berlin, 22d April 1831. Minister for Commercial Affairs."

"In my dwelling-house, now built four years ago, Louisen Strasse, No. 31, there diffused itself, on the lighting of the fire upon the hearths, so much smoke in the kitchens, that the tenants were not able to bear it. On making inquiries about the remedying of this nuisance with several competent judges, I got from a royal counsellor in architecture the mortifying information that, with respect to the doing away with the smoke, there existed no fixed knowledge as yet, and that it depended upon chance only when it got cured through experiments. That this object, which appears as yet impossible to other architects and technical connoisseurs, is an easy thing for the architect, Mr Bernhardt, he has proved clearly and plainly in my house; for without making the least trial, he has at once got the apartments given over to him, free from all smoke. In order to be useful to the public in this respect, I think it my duty to make the foregoing known to the same.

"P. LAUTIER,
Royal Confidential Secretary in the Chief Administration
"Berlin, 31st January, 1831. of the Public Debt."

"Foley place, Wednesday morning.

"Sir,—I am happy to inform you that Mr Currie is satisfied that nothing can answer better than the means you have applied for warming his house at East Horsley. If you will call here to-morrow, I will give you an order for the receipt of the amount of your contract in respect thereof. Yours faithfully,

"CHARLES BARRY."

"By his Majesty's command this testimony is given to the architect, Mr F. A. Bernhardt, that he has remedied the inconvenience of smoky chimnies in the royal palace, as well as in private houses, although all former attempts to do so had proved ineffectual. (Signed) "V. SCHUCKMANN,
"Berlin, 22nd April, 1831. Minister for Commercial Affairs."

"The fire-places in the royal post-coach manufactory at Dusseldorf were formerly so, that the dust and smoke proceeding from the smithies fell upon the lands and houses of the neighbours. The nuisance increased at length so much that one of the neighbours instituted proceedings against the post department, in which the latter was condemned through all the courts to indemnify the plaintiff, and the factory was in danger of being compelled to suspend work. In order to prevent this evil, and a removal of the manufactory (which would certainly have also been very expensive), it was necessary to find means and apply them, by which the dust and smoke of the said factory should be turned away from the premises of the neighbours. This task, which was given to the architect, Mr Bernhardt, he has satisfactorily performed, (as is testified by the annexed document of the royal government of Dusseldorf, dated 2nd August, 1833) by means of his alterations and arrangements of the chimnies. With which I hereby make known to Mr Bernhardt my particular satisfaction. (Signed) "NAGLER,

"Testimony for the Architect, General Postmaster and Chief
Mr Bernhardt, at Dusseldorf, Director of the Post
Frankfort-on-Main, 8th Oct. 1833." department in the Prussian States."

Provided with testimonies similar to these from all the courts of Germany, Mr Bernhardt attended a committee of the House of Commons, in order to be examined touching the adoption of his plan in the new Houses of Parliament. No doubt existed in the minds of the members of that committee that the architect was able do what he said he could. He was, however, asked for his *secret*. Now his "secret" was his bread, for which moreover he had paid the price of an English patent. Declining to make it known, he was nonsuited; as indeed he would have been by jobbery had he made it known. The result is, that a man who has discovered the means of decomposing smoke before it leaves the chimney, is left to pine under the withering malaria of public neglect, and that the new Houses of Parliament are to be crowned with CHIMNEY POTS.

R. P.

ON THE PRESENT STATE OF THE FINE ARTS IN IRELAND.

THE most extraordinary Irish writer that has ever appeared in that most extraordinary country, remarks of his countrymen that they are "warm-hearted, hot-headed, affectionate creatures,—the very fittest materials in the world for either the poet or agitator—capable of great culpability, and of great energetic goodness—sudden in their passions as the red and rapid gush of their mountain streams—variable in their temper as the climate that sends them the mutability of sun and shower—at times rugged and gloomy as the moorland sides of their mountains—often sweet, soft, and gay, as the sun-lit meadows of their pleasant vales." Such is the character that all their affairs take in politics, religion, commerce, manufactures, and the arts. Mutability is branded on all projects undertaken here, and by some strange fatality the change is never for the better. Ireland, it must be confessed, is fast falling into the condition of a mere province, whilst her inhabitants, without a particle of national spirit, are still dreaming of their consequence as a nation. When the day arrives, and that is not far distant, that the country shall feel its real position, then, and not before, will any thing good or useful flourish. However, as it is not our object to enter into the history of its rights or wrongs, we shall proceed to show in what state the arts are in that country at present.

To say that there is no interest felt for the success of the fine arts in Ireland would be wrong; but, in truth, the majority of those who do take an interest in the affair, know nothing of its great moral end—its influence on society, &c. &c., but only tolerate it as something to astonish—a thing that, like *reading* and *writing*, must come by nature. They therefore leave it to the tender mercies of the elements, to grow of itself unprotected.

It is a lamentable fact, that Ireland cannot boast of a solitary patron of the arts, properly so called. A collection of pictures by modern masters

is unknown here; not so with our neighbours. The proud boast of an Englishman now-a-days is, that he possesses works of men of genius of his own country while they live; and he is happy to see the genius of Old England rival that of Greece or Rome in the happiest efforts of their skill; he lives to see it, and is happy in rewarding it. Many private gentlemen in England possess collections of the works of modern British artists not surpassed by the paintings of any age or country in the world.* We should rejoice to find Irish gentlemen with the same enterprising spirit, but it is remarkable, that while Englishmen and Scotchmen laud and assist their countrymen, we find Irishmen unjustly traduce and avoid each other. We hope, shortly, to see this ridiculous and ungenerous habit abolished, that it may not become a proverb to the everlasting disgrace of the people.

In Ireland there is one feature in the conduct of certain gentlemen, respecting works of art, which requires especial notice. Many hundreds of *old* pictures, to our certain knowledge, are sold annually by auction in Dublin, at the same time that many talented artists are languishing for want of employment and even for their daily bread. The pictures which are sold in this way belong to the black invisible genus in Holland, &c., and are purchased with avidity by the *savants* of Ireland.

Now, let us glance at the institutions intended for the cultivation and promotion of arts in this country. The Royal Hibernian Academy of Arts, from the date of its charter, is now nineteen years in operation,—we must say very secret operation,—for one hears so little of this institution, that we should not have been aware of its existence at all, were it not that some of its members occasionally exhibit their works in England. We are of the notion that this talented body do not sufficiently cultivate the acquaintance, and command the confidence, of the Irish public. "Knowledge is power," says the great Bacon, and the Royal Hibernian Academy must show that they possess knowledge in order to gain a just influence with the Irish public. They should appear often before the public; they should exhibit; they should lecture; they should award premiums to successful students—drawing from the antique, from the life, and from the best copy in oil colours from some of the old masters. Very little exertion on the part of its members would accomplish this. Their *reginæ donum* would pay the lectures, and two or three silver medals in the year, or even a certificate would be deemed a sufficient distinction. This proceeding would convince the public that they deserve support; neglect this, and public investigation is sure to follow; and it is for the members to reflect if they are likely to come off with such honours to themselves as the Royal Academy has done of late days. The omission of an annual exhibition should never be repeated.† We shall not stop to guess at the cause, but just remark by the way, that if invitations to artists in England were not so limited, we should not want pictures to cover our walls to the very ceiling.

The Royal Dublin Society, certainly a most useful and influential body, of more than a century's standing, whose object is to encourage husbandry and the arts, has a drawing-school, which is divided into four

* This is our correspondent's opinion, not our own.—Ed.

† We need not say that our well-intentioned correspondent is an Irishman.—Ed.

departments, with a master to each, namely, Figure Ornament, Landscape, Architecture, and Modelling. The pupils are taught gratis. In addition, we suggest the formation of a School of Design, that the pupils may turn their knowledge of the arts to mechanical purposes. This is much to be desired, as not more than one-tenth of the pupils instructed in drawing, &c., become professional artists, so that they themselves may be said to have lost so much time, and their country the services of skilful mechanics.

This society has also an extensive museum, a good library, and an excellent botanical garden; with a curator, a professor, and lecturer of chemistry; a professor and lecturer of mineralogy and geology; and a professor and lecturer of experimental philosophy; all of whom lecture annually free to the public.

We have to add, that a society of artists has been formed at Belfast, where they contrived to have two exhibitions of their works, and of which a great many were sold. We trust they will persevere steadily, and that they may continue to receive the co-operation of the enlightened gentry of that wealthy and populous neighbourhood.

In the city of Cork, also, an exhibition has been opened this year, and we trust that the experiment will be attended with success. We should observe, with regard to exhibitions in the provinces, which were originally intended to bring before the public the works of artists who deserved protection and patronage, that their object is likely to be abused, if the artists themselves do not prevent it, by persons speculating sending pictures for sale which are already sold, thereby, in most cases, deceiving the public and defrauding the artist. We could expose a good deal of this sort of unworthy proceeding;* but we must dismiss the subject for the present, hoping that artists may attend to the interests of the fine arts, and not neglect their own.

SENEX.

ON SEEING MISS LINWOOD LEAVE THE ENTYMOLOGICAL ROOM OF THE BRITISH MUSEUM.

And hast thou, Arachne,
Resumed thy fair form?
Has Pallas lamented
That sad jealous storm?
From Museum Prison
Released thee at last,
The web-weaving artist
Of ages long past!
Be changed! said the goddess,
No more will I vex;
Shine thou among mortals
The pride of thy sex!
Caressed and beloved by
The noble and good;
Arachne, no longer,
But gifted Linwood!

August, 1839. C. E. WILSON.

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* We hope our correspondent *will* expose all he knows of this abominable double fraud.—ED.

BUST OF CLARKSON.

Thomas Clarkson, one of the immortal three whose philanthropic labours wiped the black record of Slavery from the annals of English history, is now eighty-four years of age. Like Sir Christopher Wren, he saw the goodly termination of a work which occupied the devoted attention of his early years; a work which, since the advent of our Saviour, has no parallel in the transactions of the world. All circumstances taken into consideration, the abolition of slavery is the greatest triumph ever achieved by Mind since the first establishment of the Christian dispensation.

That such a man has had no public monument publicly awarded to him will not appear extraordinary, when it is considered that the character of the English as a nation is exclusively political and commercial. No people forget their great men so readily and so soon as Englishmen. Even their successful warriors, whom they "delight to honour," are but indifferently treated, unless they happen to be alive, or fresh in the public memory at a moment of enthusiastic admiration. Had the monument to the Duke of Wellington been planned a week after the battle of Waterloo, or that of Nelson when the despatches were first received from Trafalgar, there is no knowing the amount of money which would have been collected; but the case is widely different when these events come to be taken into consideration long after their immediate influence upon the public mind has passed away. The equestrian statue of the hero of the Peninsula will, no doubt, be erected; his Grace is alive, and is very properly a favourite with the aristocracy, who have subscribed liberally on the occasion; but there is every reason to expect that the column to Nelson will be shorn of its fair proportions for want of a fractional part of that capital his intrepidity and warlike genius secured to his forgetful countrymen. It is simply a question of dates; the monument to Nelson has been too long postponed.

To return to the bust of Mr Clarkson. Some five or six months since the Common Council of the City of London, at the suggestion of a member, whose respect for the memory of the great and the good, had not been altogether absorbed by business, voted that a marble bust of the distinguished Abolitionist should be executed for the Council Chamber, to keep company with that of Granville Sharpe, executed by Sir Francis Chantrey. The commission was entrusted to Mr Behnes, who has produced a work of art, in our opinion, unrivalled of its kind. True it is that the subject he had to work from was excellent. The features of Mr Clarkson, though deeply marked with the lines and furrows of age, are not even yet attenuated; his brow is ample and finely formed, and intellectuality reigns paramount over the whole of his well-moulded countenance; but though these are elements absolutely necessary in every bust which is to be a first-rate work of art, it is not every sculptor who can treat them properly.

When we see what we consider a remarkably fine production, we are too apt to allow our enthusiasm to run away with our judgment; and believing, as we do, that Mr Behnes's bust of Thomas Clarkson is the most beautiful and perfect work of the kind ever produced, it is more than possible, if we trust our pen further in its praise, we shall forget our duty as critics and become admirers *in toto*, which critics ought ever to be. Spite, however, of all our endeavours to discover a fault in the likeness or execution, which we might parade to the world as a proof of great discernment on our parts, we are compelled to confess that we have been unable to discover a single blemish in either, although we have turned the bust round a hundred times for the purpose.

The bust is placed in the Common Council Chamber of Guildhall, upon a handsome fluted column of the Doric order, with a plinth of Badilla marble. In design and execution, it is unquestionably a work of genius. If there be any sceptics on this point, we recommend them to go and see it. The present Lord Mayor, or Mr Montague, the City Surveyor, will afford every facility.

JUDICIAL ASTROLOGY.

Astrology in the Nineteenth century! even so. The scientific world at large will hardly believe that some of the most eminent mathematicians of the present day are believers in this ancient pseudo-science. But as its disciples loudly profess their desire for an investigation, we, who are not so, proposed, as one test of its truth, the computation of a set of predictions of the forthcoming weather, founded upon astrological principles. Lo! we were taken at our word;—we will not recede—here they are. It is but right to say, that we would not allow the predictions for the first fifteen days to appear, as present weather might be some clue to that immediately following.

Meteorological Predictions for the last Sixteen Days of September 1839.

15th. The moon aspects Saturn, Venus, and Jupiter, and Mercury aspects Saturn. The general influence is for windy, cloudy, and showery weather; however, as Venus is near Jupiter, it will in some measure counteract the other influences.

16th. The moon aspects Jupiter and the sun. The day seems fair, yet as Mercury still hovers near the quartile of Saturn, it will be cloudy at times, P.M.

17th. The aspects are not powerful, as the moon has not the solar testimony. Cloudy at times; slight tendency to wind.—Note. Venus is still near Jupiter.

18th. The aspects are numerous and strong. Mercury in aspect to Jupiter; the moon in aspect to Venus, Mars, Saturn, Mercury, and Jupiter. The general tokens are for windy and showery weather.

19th. Dull, cloudy day. Cooler air, the moon having passed the aspects of Herschel and Saturn, and being in aspect to the sun.

20th. The morning opens heavily, the moon being in par. dec. with Saturn and Mars; also in trine with Venus. Slight changes P.M. The temperature seems to keep up.

21st. The aspects are not powerful. The day seems dull and gloomy. Clearer P.M.

22d. Early in the morning the moon aspects Mercury and Herschel; as the sun is approaching the equator, there are tokens of wind. Night unsettled.

23d. The aspects are very remarkable. The full moon is in aspect to Saturn, Mars, and Mercury. Moon enters Aries A.M., and the sun enters Libra P.M. Mercury is in opposition to Herschel, also in par. dec. with Jupiter, and Mars and Saturn have the same parallel. All these denote high winds and rain.

24th. Still windy and cloudy weather.—Note. The moon is at her nearest distance from the earth.

25th. No aspects of importance. Cloudy, and at times overcast.

26th. The moon is in par. dec. with Saturn and Mars; also in sextile with Herschel, and in trine to Mercury. She is also in aspect with the sun. The day seems to promise clouds and rain. Tendency to wind.

27th. Still heavy and cloudy. Great tendency to rain, as the moon aspects Venus, the sun, and Saturn.

28th. No aspects of importance. The day seems dull, yet, as the sun is approaching Saturn's sextile, the air becomes cooler.

29th. The day seems heavy and overcast. The sun's aspect to Saturn being complete, gives colder air and tokens of showers.

30th. No aspect but one of the moon to Herschel. Dull and cloudy.

— We observe, in our advertising columns, the prospectus of a proposed College for the Education of young men destined for the profession of a Civil Engineer. *Lucus a non lucendo* seems hitherto to have been the motto of the principles upon which the education of engineers has been conducted. *Ecce signum!*—First age, one to seven. Doctor Aikins' Dialogues, Barbauld's Hymns, and Darton and Harvey's Library. Second age, seven to fourteen. This age in two branches; in one course at Westminster, Eaton, Rugby, or Merchant Tailors. Classics—*Birch* and English composition. In Mr Snooks' classical and com-

mercial academy our future Engineer *should* be taught reading, writing, arithmetic, English composition, algebra, geometry, geography, and the use of the globes, plane and spherical trigonometry, and fluxions. Please to delé all after arithmetic, and you have a boy's attainments at fourteen. Third age, fourteen to twenty-one. In a manufacturing engineer's office, where he learns to be a mechanical draughtsman; if clever, can make copies of his master's machinery. Those young men who have had the luck to be under the care of the railway engineer learn a little more. In sober sadness we will ask if this be not a true picture of the course of study actually pursued by those who are about to practise in a profession requiring more varied attainments than any other.

The system to be pursued at the intended college we entirely approve of; the course of study marked out is founded upon that of the *Ecole Polytechnique*, with this difference, that the energies of the pupils will be directed to *civil* rather than military engineering. We hope most sincerely to see this college in a situation to commence operations, satisfied that it will prove a national benefit.

PROCEEDINGS OF FOREIGN SOCIETIES.

Academie des Sciences de Paris. — Exhibition of the Daguerrotype.—The room was crowded to excess, and the audience listened with deep attention to the report of M. Arrago. As we will have to return to this matter again we only state, on the present occasion, that amongst other things it was mooted by M. A.— 1. Whether it would be possible to obtain portraits by the above proceedings, and M. A. thinks it will, by placing merely a blue glass between the head and the light. 2. Whether the Daguerrotype will ever be so far perfectioned as to give coloured impressions. This also was considered probable, and some successful experiments of Sir W. Herschel were mentioned. Amongst the correspondence laid before the Academy was a letter of M. Pambaur, who had lately substituted wheels of great dimensions to those used at present on the railways of England, and the celerity which the locomotive waggons had then obtained was 22 1-3rd leagues by the hour. An interesting and very delicate new tissue, made by a species of caterpillar, was also exhibited by M. Arago.

[Our future number will contain a report *raisonné* of the proceedings of the continental and American societies, as far as they come within the scope of the Polytechnic Journal, made up to the very last arrivals of each month.]

FOREIGN PATENTS.

Plintosomia.—Mons. Vinebent, of Minemora, near Talone, has discovered a powder, to produce, with common chalk, covered with another sort of chalk *(capenta d' un altra crita bianca)*, ornamental figures as hard as stone, as well as materials for building, in substitution of stone. If this invention were to be verified, architects would have a means of embellishing their structures with masterpieces of sculpture at very little expense :—rachissima spisa.

BRITISH ASSOCIATION FOR THE PROMOTION OF SCIENCE.

Birmingham, Tuesday Evening, August 27th.

Neither space nor time allow us to give more than a very cursory notice of the transactions of the Society. We were sorry to observe a very scanty attendance in all the sections, except this day in Section G, in which Dr Lardner delivered a discourse upon railway constants. It is with great pain that we have to observe that reports were prevalent that the absence of some of the most distinguished members, and the general bad attendance, were to be attributed to one of two causes, or to both. One of these causes was said to be, the elevation of the Rev. W. Vernon Harcourt to the chair of the Association; the other was, that a serious difference existed in the general committee as to the conduct of the affairs of the Association, the objection reported to be, excessive liberality on religious subjects. It is not generally considered that the burnings of the Chartists have had much effect. We shall now proceed to give an abstract of the proceedings in Section G.

The proceedings on Monday morning commenced by Mr Hawkins reading a paper on wood pavements. He stated that he had witnessed the action upon wood pavements at Vienna for the space of four years, and that they succeeded perfectly; that he had accounts from New York to the same effect; that he considered the pavement in Oxford street (though imperfectly constructed) to be the best of those laid down on experiment; that, as proof of its strength, a correspondent had mentioned that he had seen a loaded waggon, of the weight of twenty tons, pass over the pavement in New York without producing any material effect. Mr Hawkins further gave his opinion, that great care should be taken in making the blocks perfectly true in their figure; that they should be cut from the heart of the wood; that the foundation should be sand and gravel; and that the blocks should be level before ramming. A member read an extract from a letter from his son, residing at St Petersburgh, which stated that, in that city, the blocks were laid on horizontal planks, seasoned with tar. This was an ill-considered paper; not one single *fact*, from which could be deduced the amount of wear and tear, the amount of resistance, or the extent of durability, was elicited.

Doctor Lardner then explained the construction of an instrument he had used to test the accuracy with which iron rails had been laid on a certain railroad, which he refused to name, as it might affect certain interests. The instrument consisted of a light carriage, mounted on rollers of small diameter, and without flanges. Transversely upon this carriage was placed an iron tube, with the ends turned up vertically, exactly over each rail. Upon a float, which worked in the tube, was fixed a stem, to which was fixed a horizontal pencil, which marked, as it fell or rose, a curve upon a piece of paper which was stretched on a roller whose axis was vertical, and motion, of course, horizontal. The verted sines of the curves thus formed were the amounts of deviation from perfect parrallelism in the rails. The Doctor stated that he had observed deviations to the extent of *five inches!* which statement created no small surprise.

On Wednesday morning Mr Beard exhibited and explained his filtering machine, by means of the motion of a piston (that is filtering under pressure). Mr Hawkins said, that in sugar refineries filtering under pressure had completely failed, and that in those works it was found that the common method answered best. Dr Ure pointedly contradicted Mr Hawkins' statements in this particular. Having been employed by the Government to test the amount of refined sugar produced from raw, and erected sugar-works for that purpose, having inspected every work of consequence in London, he could state positively that *there was not one of them but what had used the filter with complete success.* The discussion upon the merits of the filter then became a disquisition upon the merits of coffee, when it was stopped by Dr Lardner delivering a report of the committee appointed to try the amount of railway constants. The Doctor detailed the series of experiments with extraordinary clearness and precision, and at great length, speaking upwards of two hours and a half, when the meeting adjourned until Wednesday morning. We can only give the deduction to be drawn from these experiments, viz.—that the amount of traction due to a railway carriage consists of friction and atmospheric resistance, and, when ascending a plane, gravity. Further, the inference is irresistible, that, as has always been supposed, the atmospheric resistance is as the square of the velocity, and also that this resistance does not depend entirely, or even principally, upon the superficies in front of the carriage, but upon the general bulk of air displaced by the whole train of carriages. The full particulars of those expe riments appear in the Eighth Volume of the Association's Transactions, which we have had no time to peruse; but Dr Lardner informed the section that he had pretty well determined that resistance depending upon friction amounted to about 5 lbs. per ton.

SECTION A.

The proceedings in this section have not been very interesting.

Professor Forbes made some cursory remarks on the use of *mica* in experimenting on polarized light. He proceeded to state, that he first employed *mica* in his experiments on polarized *heat*, and that at the same time he observed some of its properties in polarizing light *which he did not make public*; but finding that vain attempts had been made in France to use this substance, he had mentioned what he had observed during his recent sojourn there, and thought he might as well repeat them

here. He then described his method of separating the mica into almost innumerable thin lamina, by exposing it to intense heat, which rendered opaque and altered the character of the light reflected, which was more circularly polarized, similar to that from polished metals. The Professor exhibited some eye-pieces, made of mica, and placed in tubes of wood. The axes of the tubes were cut diagonally, so that they made an angle of 35° with the plane of separation.

Mr Goddard read a paper on the application of the hydro-oxygen light to the exhibition of the phenomena of polarized light. He stated that his attention was first turned to the subject in 1834; that he had completed his first polariscope, a description of which appeared in the Transactions of the Society of Arts; that he had since made such improvements in the instrument that all the varied phenomena appertaining to his branch of natural philosophy might be exhibited to a numerous audience at the same time. Mr Goddard then directed the attention of the section to the importance of the analytic power possessed by the instrument. He had tried pieces of tourmatine, but had found bundles of mica superior, when properly bleached and prepared for the purpose. This bleaching was performed by exposing the mica to the action of heat; great care must be taken that the mica be not over-heated, or it would blister and become opaque. If eighteen or twenty pieces of thin lamina of mica, thus prepared, were placed between two pieces of glass, to prevent scratching, a capital analytic power would be obtained, and both complementary images be visible at once.

Mr Scott Russell delivered a lecture upon the true proportion between tonnage and power in steam vessels, in order to save the most fuel. The result, in his opinion, is, that as in sea-going vessels there is an average resistance, which does not increase as the velocity, it follows that a vessel which had a small propelling power in smooth water, might evidently meet such resistance at sea that it should only just maintain its original position, thus burning fuel *ad infinitum* without progression. The true deduction from the premises is, that there *is* a proportion between tonnage and power in sea-going vessels to produce an economical expenditure of coals, which can be calculated, provided the average amount of resistance in each particular line of traffic be known; and also, that both experience and theory demonstrated that power ought to be in a greater proportion than is generally supposed. By the kindness of Mr Russell we are enabled to give his general Algebraic Formula for determining this question.

MR SCOTT RUSSELL'S FORMULA, FOR DETERMINING THE MOST ECONOMIC PROPORTION BETWEEN TONNAGE AND POWER IN STEAM-VESSELS.

Let V represent the velocity of a given power under favourable circumstances;

Let V′ represent the velocity of a given power under unfavourable circumstances;

Let V″ represent the velocity of a higher power under favourable circumstances;

Let V‴ represent the velocity of a higher power under unfavourable circumstances;

Let P represent the power of the first vessel;

Let P′ ,, ,, last ,,

$$\sqrt{V'''\ (V-V')}=V'''=\sqrt{V\sqrt{\frac{P'}{P}}-V-V'}$$

$$V\frac{P'}{P}=\frac{\sqrt{V''-(V-V')}}{V}$$ in the case of equal expense;

When the highest proportion of power that will be economical in fuel may be obtained.

On Monday evening the President of the Association delivered the inauguration address in the Town Hall. It certainly was one of the most powerful and impressive discourses we ever heard, and was listened to with breathless attention, only interrupted by bursts of cheering. The first subject the reverend gentleman alluded to was the departure of Captain James Ross, whose voyage he considered to be one of the most important nature, and likely to determine the true magnetic curves. He showed that the co-operation of the members of this Association had not only been effectual in influencing the determination to send out this magnificent expedition, but that by the sacrifice of time and labour on the part of individuals unexampled, the chances of its success were much increased. In fact, with the Fellows of the Royal Society, as well as with the Association, the promotion of the success of the voyage was a labour of love, the stillness of the Royal Society being roused into resistless energy.

The Reverend Gentleman then alluded to the fact of Watt being a resident near Birmingham, and took occasion to defend the fame of the late Mr Cavendish from the attacks made upon it by M. Arrago in his late *elogé* upon Watt at the French Institute. He proved, beyond dispute, that Mr Cavendish, and not Mr Watt or Dr Priestly, had the merit of determining the composition of water. He then passed a high and just eulogium upon the character and labours of Cavendish generally, spoke of him as resisting the allurements of rank and wealth, and devoting himself to the pursuit of science with perseverance unexampled, and industry the most unwearied. The next subject was a defence of the Association against the attacks made upon it by the *British Critic*, for permitting to the late Mr Corrio to eulogise the memory of Doctor Priestly. He declared that if any attempt had been made to invade the precincts of either politics or religion, he would not have permitted the attempt to pass unnoticed. Mr Harcourt proceeded to notice the ground of attack which had been made upon the pursuit of science, particularly geology, as inconsistent with revealed religion. He showed that the practical descriptions in Scripture were not to be taken literally: that if the chronology of the Book of Genesis were to be strictly adhered to, such a mass of confusion between reason and religion would be raised that the very foundations of even natural religion would be sapped, and concluded by exhorting the members of the Association to go on, undeterred by the clamour of the ignorant and the bigotted, in building up the temple of truth.

THE MODEL ROOM.

We were much disappointed in this department. It seemed more like a showroom than a model-room. As for Birmingham, it only exhibited two things worthy of notice,—a machine for making button-shanks, and a very clever wind-gauge and register, a similar one to which has been sent out with Captain Ross's expedition. The machine which created the greatest sensation was one for making cards for carding cotton wool. There was a beautiful lathe, by Mr Whitworth of Manchester, and two very ridiculous presses as we ever saw, one being worked with *four* racks, the other with four screws. There was the usual proportion of models of steam-engines, &c. The glass manufacture in Birmingham has much improved.

A COINCIDENCE, OR A PHILOSOPHIC TRUTH.

Let the expansion produced by the red ray be 6, that by the yellow 9, that by the blue 21, the atomic weight of oxygen to nitrogen 875, hydrogen 0·625; then 6 (red ray) + 21, (blue ray) 1, (oxygen +) 0·625, Hydrogen=(yellow) 9+ (nitrogen), 875.

THE

POLYTECHNIC JOURNAL,

A MAGAZINE OF ART AND SCIENCE.

"Felix qui potuit rerum cognoscere causas."—VIRG.

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. BIRMINGHAM, 1839.

THE pre-ante-penultimate session of the nomadic philosophers is ended; the laudations of the ignorant, and the sneers of the malicious, are ended also; we may now therefore sit down, and without fear, favour, prejudice, or passion, examine what the session of this year, 1839, has done to justify the claim of this Association to the title of one "for the advancement of science." We acknowledge that it is with strong misgivings we enter upon the task; for, on the first formation of the Society, we looked for great things from its exertions, and hitherto our expectations have been entirely disappointed.

Before we enter into a critical examination of the scientific (real or supposed) proceedings at Birmingham, it is necessary to take some notice of what may be called the *lay* condition of the Association.

The meeting had been determined to be held at Birmingham, a town always famous for the skill and ingenuity of its artizans, but never noted for the love and devotion of its inhabitants to the higher and more abstruse branches of knowledge. This objection might have been got over, if the principal people in the town and neighbourhood had heartily desired the visit of the Association. But this was not the case; and when we state that Messrs BOULTON and WATT did not give a single penny for the purposes of the Society, nor take the slightest interest in the proceedings, the degree of importance at which the endeavours of the Association was estimated may correctly be ascertained. We do not say by this that the manufacturers of Birmingham undervalued the advantages derivable from a devotion to, and advancement of science, but we do assert that there was a prevailing feeling that, from the very nature and constitution of the Society, it was not calculated to carry out with success its own professed object,—the advancement of science. Instead, therefore, of the members of the Association having been welcomed with enthusiasm and ardour, as the illuminati of the age, as the Mæcen-asses of science, as the precursors and pioneers for some future Newton or Davy, they were received with that urbanity and politeness, arising rather from a consciousness of what was due to the character of

the entertainer than to the merits of the visitor. The manufactories were liberally thrown open by their owners to the inspection of strangers, but it was evident that these incursions were good-humouredly tolerated rather than heartily welcomed. The first condition, then, of the Association in the town of Birmingham was, that its merits were not estimated at a high value, and that it consequently was not efficiently supported by the inhabitants.

The second condition of the Association was, that the usual number of regular members did not attend, and this from three causes.

First, The worshippers of fire residing in Birmingham, not content with the numerous fiery furnaces which surround the town, having also made burnt-offerings of the dwelling-houses of their fellow townsmen, some of the members of the Association thought that they too might be made victims to the disciples of "Swing" if they visited the place; having, therefore, a provident regard for the future interests of science and their own flesh, they abstained from their usual visit. Second, There is a fast growing opinion among the members, that the continuance of the Association will not subserve its own professed interests. Third, There was, as we mentioned in our first number, a division of a personal nature among its more important members, and many of them therefore refrained from sanctioning the proceedings at the Birmingham session.

Taking these things into consideration, can we wonder the lay condition of the British Association in Birmingham was very bad; in fact, *pro tanto*, a *failure*. We are sorry to say that in the legitimate proceedings of the Society there was nothing which could redeem that failure! The papers read before the several sections were generally unimportant, often erroneous, sometimes irrelevant, and hardly ever interesting. The discussions and arguments arising upon them were discursive and illogical, conducted without temper, from a suspicion on the part of some of the speakers that party spirit and favouritism had taken possession of the chairs.

These are harsh terms. The question is, are they deserved? *We* will not decide—the public must—and it shall be our business to lay the evidence before it.

Anticipating its decision for awhile, we ask, are we not justified in prophesying the decease of the British Association for the Promotion of Science after three more sessions? We will allow them Glasgow, Manchester, and Leeds; our wandering Magi will then burrow in their native homes, the college, the school, and the lecture-room, for evermore; and some future recorder of *Philosophical* Transactions will ask, "Where are those of the British Association for the Advancement of Science?" And echo shall answer, "Where?" *

* A writer in the leading Journal of Europe supposes that the Birmingham Meeting was a kind of epicurean symposium—a feast of *skulls*. We, who enjoy good living, sorrowfully assure him that it was nothing of the kind. There was a tea-and-sixpenny dinner, but all that was provided for the Association by the hospitality of Birmingham were sour grapes, raspberry vinegar, and finger biscuits, in the Town Hall, on the Tuesday evening. There were few temptations to breaches of temperance, soberness, and chastity, at the Birmingham Meeting, undoubtedly.

Section G.

'Mr J. T. Hawkins on the Wood Pavement;' a paper remarkable for containing literally no information whatever upon the subject to which it alludes; and as for *opinions*, those of any man accustomed to draw a truck in Oxford street would be of at least equal value, as they would be formed upon experience.

'Mr Scott Russell on the most Economical Proportion of Power to Tonnage in Steam Vessels.' The principle upon which a higher proportion of power to tonnage than what theory would at first sanction, is found most advantageous, appeared some time ago in the *Athenæum*. Mr Russell took as much pains to make this principle clear to his audience as if he were lecturing school-boys or the members of a Mechanics' Institution. Now with all due deference to Mr Russell, this is diffusing science, and not *advancing* it. In our first number we gave this principle as well as Mr Russell's general formula. In our second edition we corrected what we believe to be a clerical error in that formula, as it appeared in our first edition, but it stands the same in both the *Athenæum* and *Literary Gazette*. However, Mr Russell's theory, as it stands, is totally wrong, as will be seen by his first equation compared with his own example, as under—

$$\sqrt{v''' - (v - v')} = v'''$$

which, being reduced to his own figures, stands thus—

$$2\sqrt{6\tfrac{3}{4} - (9 - 5)} = 6\tfrac{3}{4}, \text{ or } {}^2\sqrt{2\tfrac{3}{4}} = 6\tfrac{3}{4},$$

which is impossible.

The following is the proper formula:

Let v be the velocity of a vessel of a given power under favourable circumstances,

v' the velocity of the same vessel under unfavourable circumstances,

x the required velocity of any other vessel under unfavourable circumstances,

p the power of such vessel,

$$\text{Then } \sqrt[2]{\sqrt{p - 2(vv' - v'^2) - (v - v')^2}} = x.$$

The power of the vessel whose velocity is v being represented by v^2.

Perhaps it may be as well to give an example in figures, for the benefit of our non-mathematical readers.

Let 100 horses be the power of the first vessel; 10 miles per hour its velocity in favourable circumstances; 8 miles per hour in unfavourable circumstances; and 180 horses the power of a similar vessel, whose velocity under unfavourable circumstances is required.

	Miles.	Horses.
Power for producing a velocity of 10 miles per hour under favourable circumstances.	=	100
Ditto under unfavourable circumstances.	8 =	64
Then - - - -		36 horses is, of course, the

power required to overcome the unfavourable circumstances and is a constant.

Then - - - - - - - -	180 horse power
Deduct amount of power for unfavourable circumstances - - - - - -	36
and the square root of - - - -	144 is 12, the velocity.

We are well aware that these mistakes are to be attributed to want of preparation on Mr Russell's part; but we respectfully submit that that gentleman wasted the time of the Section, as he gave no information but what had already been communicated through the pages of the *Athenæum*. We have now written what he ought to have spoken.

Dr Lardner said the principle was quite new to him!

Dr Lardner described an instrument he had invented for the purpose of detecting inequalities in the levels of two parallel rails. This we described in our first number. We again notice it, to observe that the Doctor stated that he had found on a certain railway a difference of five inches in the levels of parallel rails! This statement was received with something very like incredulity, and he was asked to name the railway, which he refused to do, as it might affect the interests of the parties. The only way in which the interests of the company could be affected would be by a feeling of alarm on the part of the public being created by his statement, and it is evident that the Doctor thinks such alarm justifiable. If the public were influenced by the Doctor's statement, suspicion and distrust of *all* the railways would prevail, and most unjustly. In our opinion the Doctor should have named the railway or held his peace. As to the instrument, a bricklayer's level would have been found more effective, and cost much less.

Mr Beart exhibited a filtering coffee-pot! This coffee-pot answered very well, but the Council of Section G. might have recollected that the members did not come to Birmingham from the ends of the earth to see a coffee-pot!

'Resistance of Air to Railway Trains,' by Dr Lardner. The results of the labours of this gentleman and his collaborators are of the most important nature. If a train of railway carriages be allowed to run down an inclined plane, it is evident that there is a tractive force equal to the weight multiplied by the particular height of the plane, and divided by its length. This is undoubtedly a far more certain experiment than the use of the dynamometer, and greater reliance may be placed on the evidence afforded. In experimenting on some inclined planes on the Grand Junction and Liverpool and Manchester Railways, it was found that after a time the train descended at an equable velocity to the bottom of the plane. The only inference to be drawn from this is, that the resistance of the air and the friction of all the moving parts exactly balanced the force applied! By varying the experiments, by increasing the force applied, and not increasing the bodies which the air resisted, and *vice versâ*, elements were obtained which have very nearly determined the constants of air and friction. The formula are to be found in the printed transactions of the Association: we think the Doctor should

have given them to the meeting without putting the members to the expense of purchasing copies. It cannot be an objection that it would have taken too much time, for the Doctor spent four hours and a half in explaining at length what might have been very well done in half an hour; in fact, the tables hung up against the wall were almost sufficient. But we were sorry to observe, that in this Section there prevailed a spirit which seemed more anxious to obtain the applause of the vulgar than the contentment of the enlightened. No man can make the obscure clearer than Dr Lardner. It is his peculiar forte, but he ought to remember that the frequenters of the Sections of the British Association are at any rate *quasi* scientific persons. We again repeat that the Association was instituted for the *advancement*, and not for the *diffusion*, of knowledge. There was a singular fact mentioned by the Doctor; viz. that there was no perceptible difference in the speed of the train when proceeding through a curve or a straight line. Some years ago the Doctor was of opinion that there was great danger in passing these curves at rapid speeds—an opinion which we took occasion last month to controvert. This circumstance proves that we were quite correct. One important result of these experiments is, that the radii of railway curves may be smaller than now allowed by the standing orders of the House of Commons, without danger or loss.

Mr Vignoles expressed his surprise at these results, and stated "that much capital would be saved in future lines, by the engineer not being compelled to incur the same expense *in excavations and embankments and other works into which he was driven by the supposed advantages of very low gradients.*"

There were undoubtedly many strange assertions made during the scientific week, but not one so extraordinary as this. Here is a man of some standing as an engineer perversely falling into one of the most absurd errors imaginable. Instead of the inference drawn by Mr Vignoles from these experiments, exactly the contrary one ought to be insisted upon with (as Jedediah Cleishbotham has it) the more preponderating vehemence. The necessity of a college for adult engineers, as well as tyros in the profession, is fully shown.

Suppose a line of railway to be 40 miles long; suppose that it be determined that the distance shall be performed in a given time, say two hours. We will now see how these experiments affect the question of gradients.

First, a level line.

A fixed amount for friction, say - - - - -	a
An amount for the resistance of the atmosphere, which, as it is as the squares of the velocity, we will call 20 × 20 × 2 hours - - - - - - - - -	800
	$800 + a$

is the expenditure of steam power.

	H.	M.
With inferior gradients; such that 20 miles shall be accomplished at the rate of 15 miles per hour - - -	1	20
20 miles at 30 miles - - - - - - -	0	40
The same time as before - - -	2	0

Friction as before - - - - - - - - - a

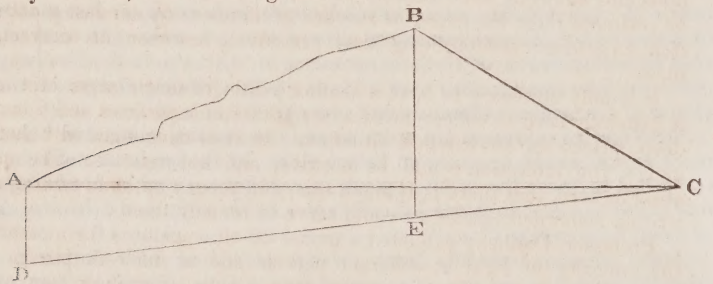
Resistance of air as the square of the velocity: H. M.

$15 \times 15 \times 1\ 20 = 300$

$30 \times 30 \times 0\ 40 = 600$

$900 + a$

Showing a difference of one-eighth in favour of a level line entirely consequent upon the inference to be drawn from these experiments!!! So much for Mr Vignoles's share in the advancement of science. In reference to this same subject of gradients, there is an error prevailing which owes its source to Dr Lardner, and which therefore is the more necessary to be set right. It is this:—That between two termini of a railway there is the same expenditure of force in accomplishing the distance, whatever be the gradients; and if the steam power could be apportioned to the different gradients, there would be no loss. This is sometimes only the case, and is not a general law.



In the accompanying figure let A B C represent the vertical section of a railway, A and C being the termini. Let any portion of the line A D represent the traction due to a railway A C, which has no intermediate ascents and descents. Then the line B E is the traction due to the portion of railway from A to B, and which evidently may be greater than A D, the traction for the whole distance. The general law is consequently false.

Dr Ure read a report on the specific gravity of steam at different temperatures. This paper requires no comment: we hope to give Dr Ure's results in a future number.

We have now gone through Section G, and we think our readers will agree with us that nothing could be more commonplace, puerile, and useless than its proceedings. We hardly wonder at it. Andrew Ure spoke from the floor, Mr Hawkins from the *dais*.

Section A.

The first paper worthy of notice, read in this section, was by the Rev. H. Lloyd, 'On the best Positions of three Magnets, in reference to their mutual Action.'

If it be necessary to have a multiplicity of magnets for the purposes of observation, it is obvious that the action upon each ought to be simple, whereas, not only will magnets indicate earthly magnetic influence, but

the influence of each upon each. Thus any particular affection of any magnet is not an index of terrestrial influence, but of terrestrial influence combined with other forces. Professor Lloyd has succeeded in finding a means by which these extraneous forces may be neutralized.

We were not present when this paper was read, but the report of the *Athenæum*, which we have found correct in other instances, and have no doubt is so in this, gives no particulars by which the public may be enabled to make use of Mr Lloyd's discoveries. Perhaps a more detailed account may be found in the transactions of the Association, for which the public will have to pay 15s.

'Meteorological Observations made in Scotland, by Sir D. Brewster,' was curious, but did not contain a single hint by which meteorology, as a science, could be advanced.

Professor Stevelly directed the attention of the section to the little reliance which could be placed on the indications of rain-gauges in elevated situations. There was a long discussion, which led to nothing, upon this subject. One foolish person proposed that *the rain should be collected from the external surface of a sphere by capillary attraction*, an uniform section being thus presented, however the wind might blow.

It is only necessary to have a shallow vessel of much larger size than is generally used to collect the rain, say 1000 feet superficies and 6 inches deep, placed in an exposed situation. It is evident that, with such a gauge, the indication would be positive, and not relative. We must observe here, that there is as much time and money spent in talking and writing about deficiencies as would serve to remedy them.

Professor Daubeny exhibited a model of an apparatus for measuring the intensity of light at different periods and at different places. A sheet of photogenic paper is unrolled from a cylinder at an uniform velocity, and the whole surface exposed to the action of light for an uniform time; the discolouration of the paper, therefore, is as the intensity of light.

The impracticability of this instrument was generally felt. No *advance* here.

Mr Fox Talbot on Daguerre's Process.

Cursory remarks on the subject, but no attempt to discover the physical laws by which the extraordinary effects are produced. Science here is at fault. Mr Talbot deserves all credit for what he has done, as well as M. Daguerre; but we beg to ask what the other members of the Association, individually or collectively, have done to discover this great secret? Literally, nothing.

Report of the Committee on Waves.

This was really an important paper, and does infinite credit to the genius, labour, and research of Dr Robinson and Mr Scott Russell. Science upon this subject is yet in its infancy, but it owes its very birth to the labours of these gentlemen; and if the Association could boast a few more investigations of equal interest, and carried on with equal judgment, no one would be found hardy enough to deny the utility of its abours. On this subject we are scholars, and not critics, and must refer

the reader for particulars to the report itself, which we hope will be published in a cheap form. Mr Russell, in the course of his statement, said that the form of least resistance in vessels corresponded to that of the waves, the form of anterior displacement corresponding to the great wave of translation, and the posterior to that of replacement. In answer to a question from Mr Byrne, it was stated that the equation of form would be found in the printed transactions of the Society.

Really, we are of opinion that it is needless to have meetings at all, if the most valuable part of the information acquired at the expense of the Association is to be had only through the printed transactions. How can discussions arise, where there is nothing to join issue upon. We have always understood that the great use of men meeting together is that they may discuss and object, thus arriving at true conclusions; but the principal managers of the Association carefully avoid any collision. Their papers and discourses are only so many indices to that information which must be sought for elsewhere. An individual having *influence* may print the most erroneous opinions. Those opinions will go forth to the world bearing the imprimatur and authority of the Association, and much mischief may be done. In fact, this cowardly avoidance of discussion has damned the character of the Association, and nothing but the infusion of a new spirit will save it from extinction. This change we do not expect. The confession of error implies greater powers of mind than are to be found among the managers of the British Association.

Notice respecting the Use of Mica in polarizing Light, by Professor Forbes.

On the Use of the Oxy-Hydrogen Microscope in exhibiting the Phenomena of Polarization, by J. F. Goddard.

We have already noticed these two papers, and now only recur to the subject in order that we may expose, in its proper colours, what we consider to be very disgraceful and unworthy conduct.

All our readers are not perhaps aware that the polarization of light was discovered by Mr Goddard in the year 1834, and that, continuing his researches, he produced in 1836 his first polariscope. Mr Goddard is a modest, unassuming young man, not having the advantage of a *tail* of capital letters, and consequently was supposed by some person connected with the Association to be a proper person to be victimized. We, having no previous acquaintance with Mr Goddard, saw through the trick played upon him, and offered him the opportunity of making some observations on the subject in the pages of this Journal. Like many men of talent, he would rather submit to injustice than put himself prominently forward, and declined our offer. This only makes us the more anxious to execute judgment on the offending party. That party is Professor Forbes.

Any person not present would suppose that the two papers named were a different subject. This is not the case.

Professor Forbes' could hardly be called a paper. It was an ill-concocted, hasty notice on the very subject Mr Goddard had been specially invited by a number of the committee to address the section upon. The

object was evident. It was to rob and plunder an intelligent individual of the credit due to him for an important discovery. Professor Forbes stated that he had discovered the polarization of light whilst experimenting upon that of heat in 1836, but had not made the discovery public. We do not believe this statement. Professor Forbes is too fond of notoriety not to have taken the credit for such a discovery as the polarization of light, had he really made it. We wish to know why the committee permitted the Professor to address the section at all upon this subject. Mr Goddard's paper had been before it, and it must have been aware that Professor Forbes could add nothing to Mr Goddard's statement, and the effect of the Professor's addressing the section was to make the subsequent statement less interesting. We believe that Professor Forbes would not have addressed the section upon the subject had he not known that Mr Goddard was about to do so.

This is not the first time that complaints have been made that communications sent to the committee have been returned as unsuitable, and the contents been made use of afterwards by some person having access.

This was publicly stated by Professor O. Byrne, and we strongly suspect the same to have been the case in this instance. However, there was some satisfaction. The affair was so clumsily managed that no one was deceived. We would advise gentlemen to become perfect in the art of extracting the *handkerchief from the salt-box* before practising the higher branches of the profession.

We have before stated that there was a strong suspicion of partiality and favouritism on the part of the chair. This applied particularly to Mr Whewell, whose manner was *brusque* in the extreme. The committee, for its own credit's sake, if not for the comfort of the section, should exclude him from the chair of the sections at Glasgow. Thank God! our really great men were absent. Yes! Section A—Mathematical and Physical Science, and Hamilton, Herschell, Babbage, and Faraday, not there!

Of the proceedings in the medical section we are not competent to form an opinion.

Section B.

Mr Grove on a small Voltaic Battery of extraordinary Energy.

The construction of this battery was not very clearly described; but, since our return to town, we have had some information given us.

Zinc and platina are the metals used. The zinc is immersed in muriatic acid and water; the platina is mixed sulphuric and nitric acid. The destruction of metal and acid in this battery must be very great, and very possibly its energy may be equivalent.

In this section the proceedings were more satisfactory than in either the Physical or Mechanical. The result of several very interesting experiments was detailed, and gave much satisfaction. As critics, we have nothing to object to this section.

Statistical Section.

The information communicated in this section was meagre in the extreme. The results were, of course, unsatisfactory.

Model Room.

It might have been reasonably expected that the Model Room at Birmingham would have been a most important and interesting exhibition; instead of which, it was most miserably deficient in evidences of mechanical genius. Birmingham only exhibited one machine possessing the slightest claims to notice, *viz.*, a machine for making button-shanks.

The manufacturers considered the Model Room as a capital show-room for their manufactured goods, and a cheap way of advertising them.

Our task is now finished. It has been a very disagreeable one; but, as we have been enabled to correct errors and impart truth, we are content.

The public may deduce an important moral from the result of this examination, viz., the folly of worshipping idols. To the student we say, place not the slightest reliance on the *opinion* of the Professor. Let *him* demonstrate—let the induction be your own.

LAING'S DANGEROUS FALLACIES IN STATISTICAL SCIENCE.

A fearful account of the amount of crime in the kingdom of Sweden is given by Mr Samuel Laing in a *Tour in Sweden*, published in this year, 1839. He considers and endeavours to show, that crime in that kingdom is greater than in any other kingdom in Europe; and that there is, notwithstanding, a superior degree of education, not only of civil education, but also religious. Mr Laing sums up his case in the following words:—

"First,—The Swedish nation is more generally educated than the English, the Scotch, or perhaps any in Europe, except the Danish. Elementary education in reading, writing, and the shorter catechism of the Lutheran church, is so universal, that even the aid of the schoolmaster in these branches is superseded in many districts, and the children are instructed by their parents. The educational institutions of government—the two universities—the twelve gymnasia—the numerous Latin, or high schools, and Apologist, or common schools—and the law requiring adults to show that they can read and understand the Scriptures before they can be admitted to the communion-table, and to have taken the communion before they can marry, or exercise any act of majority—diffuse widely the means of education, and its first elements. The many periodical and other publications constantly issuing from the Swedish press, and the establishments in the bookselling trade to be found in the smallest and most remote towns, prove that the Swedes are an educated people.

"Secondly,—In no country in Europe is the church establishment so powerful and perfect. In Sweden there is not merely an union of church and state,—the church is a distinct component portion of the state, equal, in its constitutional share in the legislature, to the whole body of the aristocracy, or of the representatives of the people; and possessing extensive authority and influence—besides its share in the legislature—through the department of government for church affairs. It has but one religion, its own, to deal with in the nation—there being no Catholics nor Calvinists among the Swedes; and is undisturbed by sectarianism, or dissent of any note from its doctrines or forms. Its members, as a body, are highly educated, of undeniable piety and zeal, with very efficient internal regulations in their establishment for preventing negligence or laxity in the discharge of clerical duties, or the admission of incompetent individuals to clerical functions. The exemplary church

attendance of the people, the erection of new and decoration of old churches by voluntary contributions, and the free-will offerings at Easter and Christmas to their pastors, prove beyond question the popularity and influence of the established clergy in Sweden, and the good feeling in general of their flocks towards them.

"Third,—Notwithstanding this powerful, effective, and complete church establishment, and notwithstanding this very wide diffusion of education and religious instruction by parental and clerical tuition, and by an extensive and efficient national establishment of public schools suitable to all classes, the Swedish nation stands among the lowest in the scale of morality. No other three millions of moral beings in Europe appear to commit, within a given time, so large an amount of crime and moral transgressions.

"The inference from these facts must be, that church and school establishments in a country, however perfect and efficient—and in Sweden they are eminently so—will fail to realise what so many good and enlightened men among us are expecting from them—the improvement of the moral condition of the people."

Well may Mr Laing feel some degree of nervous apprehension at the blow he is thus aiming at our infant efforts towards national education; a blow which, if not vital, would at least damage its growth and progress for years, should the statements and inferences of this book obtain general credence. Well may he feel that, "at a time when all right-thinking individuals are zealously promoting this diffusion of knowledge, and when the most enlightened are inclined to adopt a school establishment, as well as a church establishment, in the arrangements of the state, and even with some kind of compulsory power to enforce the education of the people, it is startling to hear that the means may not be adequate to the end in view—the moral improvement of the social body." It *is* startling, indeed, and excites almost as much astonishment in those who see through the fallacy as in those who do not. "In moral as in physical science," proceeds Mr Laing, with imposing gravity, "it is only by collecting and comparing facts and observations from many quarters, that general truths can be developed. The importance of the subject to all, and its deep interest to many, must excuse a tedious inquiry into the cause why, in this quarter, education and religious instruction have so signally failed in elevating the moral condition of the people." Now it shall be our business to show what *sort* of importance is to be attached to these "general truths" developed by Mr Laing.

In illustration of the advantages as to education enjoyed by the Swedes, Mr Laing states, speaking of the northern parts of the kingdom:—

"It might be expected that education is in a low state in these remote poor settlements, in which the few people can barely subsist their families, and cannot possibly keep a schoolmaster, nor support their children at a distant school. It is, however, to the honour of the common people of Sweden, that they alone, of all European nations, have outstripped the schoolmaster, and are so generally masters themselves of reading and even writing, that parents in the lowest circumstances have no more occasion for a schoolmaster to teach their children these elementary branches of education, and also the church catechism, than they have for a baker to make their bread, or a sempstress to mend their clothes. Of the whole population, including even Laplanders, it is reckoned that the proportion of grown persons in Sweden unable to read is less than one in 1,000. This general diffusion of elementary education among the people is ascribed to the zeal of Gustavus Vasa and his immediate successors. John III, in 1574, ordered that the nobleman who had no knowledge of book learning should forfeit his nobility. Charles II, in 1684, required the clergy to have every Swedish subject taught to read; and he made it a law, that no marriage should be celebrated unless the parties had previously

taken the Lord's Supper; and that none should be admitted to the communion-table who could not read, and were not instructed in religion. This law has spread family education. Parish schools are only found where there happens to have been lands or rents bequeathed in old times for the endowment; and these in some parishes are fixed, in others ambulatory. The total number of the parish schools is not known; but in one province, Wexio-lan, in eighty-six congregations there were but twenty-nine schools, either fixed or ambulatory, for teaching the first elements; and in this province, in 40,000 people, only one person was found unable to read. It is supposed that more than one-half of all the parishes in Sweden have no schools. The children are taught by their parents at home. Petrus Laestadius, one of the missionaries at present in Lapland, and the son of a settler in one of those colonies in the forest, gives a very interesting account in his 'Journal of a Year of a Missionary's Service in Lapland,' published in 1836, of the privations and hardships which his parents had to endure in the wild and lonely forest, about forty miles from any other habitation. 'Yet with all their poverty (he says), and all their striving for the most pressing necessaries of life, our parents never forgot or put off the teaching us to read. Before we could well speak, our father taught us our prayers, and these were the first thing in the morning and the last thing at night. Our mother spared no pains to teach us to read in a book, and at five years of age I could read any Swedish book, and at six could give reasonable answers to questions on the head points of Christianity.'"

Respecting the church establishments he gives the following account:

"In Sweden there are 2,490 congregations; viz. 1,147 country parishes, and 129 town charges, with 1,214 annexed chapels in the larger parishes. According to the population, this establishment would give an average of about 1,188 persons to each congregation; but they are, as in England, very unequally divided and paid, from the different endowments of livings in Catholic times being retained. The whole establishment in Sweden connected with public instruction consists of 3,193 clergy, and 3,753 sextons or parish clerks, organists, and church servants—the latter a burdensome and apparently not very necessary class; but the sexton has his manse and living, as well as the minister, from the parish. If to these 6,946 persons connected with the religious instruction of the people, we add 763 schoolmasters, teachers, and professors, paid by the public, we have 7,709 males, whose wives and children amount to 15,114 persons, making a total of 22,823 individuals, or 1 in every 126 of the whole population, living by the teaching the Swedish people their religious and moral duties."

The two propositions of Mr Laing, respecting civil and religious education, we may admit as distinctly established; but his assertions respecting the amount of crime, under such unparalleled circumstances, deserve the most strict examination.

In support of the alleged prevalence of crime in Sweden, Mr Laing appeals to the official documents published by the Swedish government. The number of convictions in 1835 was 21,262, the whole population being 2,983,144; and in 1836 the number of convictions was 22,292 (p. 109). The rural population in 1836 was 2,735,487, and amongst the convictions were—

1 case of incendiarism.	13 cases of beastiality.
28 cases of murder.	1,176 cases of theft.
10 cases of child murder.	7 cases of perjury.
4 cases of poisoning.	2,080 cases of assault.
9 cases of violent robbery.	(P. 126.)

The other cases are not particularized. In p. 134 Mr Laing states:—

"I have conversed with several enlightened Swedish gentlemen upon the extraordinary comparative state of the criminal calendar of the country. They all ascribe this apparent excess of crime to faulty legislative or judicial arrangement, by which mere police transgressions (such, for instance, as the peasantry of a whole parish

neglecting to mend their roads, or to appear with their horses in due time at the posting stations to forward travellers) may be punished with fine or even imprisonment, and those cases are registered and accounted as crimes. In towns, in like manner, neglect of sweeping chimneys, mending and cleaning streets, being punished by fines, and, if these are not paid, by imprisonment, the apparent catalogue of crimes may be enlarged to what I state it to be, but that in reality the moral delinquency in Sweden is small."

Yet, with this solution of the problem staring him full in the face, and which he has just written down from the mouth of competent judges of the question, Mr Laing proceeds as though no such solution had been given or written.

A traveller very hastily running over a country, as Mr Laing did through Sweden, when he finds the well-informed native inhabitants differing from him decidedly in their opinions, ought to be diffident of his own judgment, more particularly if everything which comes under his own eye tends to support their view, and not his own. Mr Laing admits (p. 140) that a traveller's luggage may be sent open from one end of the kingdom to the other with perfect security, although not accompanied by any one in charge of it; and although at the end of every seven or eight miles it came into the hands of a different peasant or post-driver. It is unheard-of that such property is ever stolen, or that travellers are ever robbed on the road. All travellers, he says, agree in this observation.

The whole of the false reasoning of Mr Laing is founded on one grand fundamental fallacy, which is this;—*he assumes that the amount of crime in any country is in proportion to the number of convictions.* Now there is no proposition which is more decidedly false. When crime can be practised with comparative impunity, it is sure to prevail; but when active measures are taken to prevent crime, the number of convictions greatly increases, but the amount of crime diminishes. We need not make many observations on a matter so perfectly well understood by all who have paid any attention to the subject, and need only refer to the interesting Report of the Constabulary Commissioners lately published.

Mr Laing supplies ample information of the extensive means in Sweden of pursuing offenders, and bringing them to justice. In Sweden there are 264 Courts of First Instance, with a judge in each (p. 294). For the greater offences there are three High Courts in different parts of the kingdom. The clerical functionaries, including schoolmasters and servants, are stated to be 7,709; the civil functionaries, 9,485; and the military functionaries, 48,930 (p. 272). There are public prosecutors, and *the prosecutions are at the expense of government.*

This will account for the number of prosecutions in the courts. We may be sure little crime escapes punishment, and Mr Laing himself remarks that the functionaries are very anxious to create employment for themselves, and often make "much ado about nothing."

The Swedish population is accused of being remarkably unchaste as compared with other nations, in proof of which it is stated that the proportion of illegitimate to legitimate births in the ten years from 1800 to 1810 was 1 in 16; from 1810 to 1820, 1 in 14; and from 1820 to 1830, 1 in $14\frac{6}{10}$. The author goes on to say that in England and Wales it is but 1 in 19.

Now on the whole of this latter question he is in error, both as to his facts and his deductions. The only return as to illegitimate children in England and Wales which we possess is that of the year 1830, which was rendered by the overseers of parishes. These officers could only return, and did only return, such illegitimate births as they had occasion to know of in their official capacities. In respect of births generally, prior to the Act of Registration, which came into operation on July 1st, 1837, there was no account taken at all in England, and, as the registration of births is even now not compulsory, it is very imperfect. If a rigorously strict account of all births had been taken, distinguishing legitimate from illegitimate, the proportion would probably have shown a state of morals in England not better regulated in this respect than that of Sweden. This much is certain, that in the return to which we have alluded the proportion of illegitimate to legitimate births in Wales is 1 in 13.

Mr Laing dwells on the contrasts of proportion of illegitimate and legitimate births in London and Stockholm. In the former city, or rather in the county of Middlesex, for that is the return, it is 1 illegitimate in 38 births, and in Surrey it is 1 in 40; whereas in Stockholm it is 1 in $3\frac{7}{10}$, or, in other words, as 10 to 37; being nearly 1 in 4, and not 1 in 3, as he erroneously, in the face of his own figures in several places, states it to be.

Now when Mr Laing observed the striking contrast between London and all England, and more particularly between London and Wales, did he really attribute this to the superior purity of morals in the metropolis? If he did, he is grievously unfit for reasoning on any subject of statistics. It is obvious to even the most obtuse that the difference arises from the great number of public prostitutes in the metropolis, and not from any purity on the part of the men. If he could separate the rural population from the town population of England, he would no doubt find, as has been ascertained in Wales, that there would be no superiority over Sweden.

The proportion of 10 illegitimate births in 37 in Stockholm is certainly very great, but after all will give an aggregate of only from 400 to 500. Mr Laing might easily have accounted for all this by the absence in Stockholm of a description of females, only too abundant in the cities of other European countries. In a capital where there is an unusually gay court, where there are many nobility and gentry, 2,794 civil, and 4,258 military functionaries, besides opulent merchants and tradesmen, we may well expect that many men will seek the gratification of their passions. The suppression and non-existence, as a class, of those unhappy females who are the victims of society, is the manifest and only reason of the large proportion of illegitimate births in Stockholm.

In all the lists of crimes quoted by Mr Laing the cases of fornication are included to swell up the number, which of course can only be cases of public prostitution; and the efforts to suppress this kind of immorality seem to have been attended with success, for Mr Laing says that in walking through the streets of Stockholm he never saw an immodest or even suspicious look or gesture even among the lowest of the people.

Were an equally successful suppression to take place in London, is it

not *tolerably* likely that the proportion of illegitimate births would soon exceed the present average of 1 in 38?

How little qualified by previous information Mr Laing is to write on such matters is shown by the astonishment which he expresses (p. 150) at the statement made to him by a gentleman, "that the convict and the pauper live better in England than half the Swedish nation;" and he thence infers that in England the standard of living is much higher than in Sweden. If he had only read the Report of the first Poor Law Commissioners, he would have known that in England the standard of living of the parish pauper was much higher than that of the industrious labourer; that the living of the felon in gaol was higher than that of the pauper; and the living of the condemned convict was higher than either. Such things ought not to be, and in the case of the pauper there is now an alteration.

Mr Laing quotes (p. 150) with astonishment, the cheapness of the expense of living in two houses of correction at Stockholm; in the one about 15¼d. per week, and in the other 16¼d. Yet this exceeds the expense of the food of a pauper in the workhouse of St George, Hanover square.

Mr Laing assumes that the income of a working tradesman in London averages 78*l.* a year, being 30s. a week (p. 153). From our extensive inquiry into this subject, we can tell him that exceedingly few earn so much money; that, when employed, 25s. is a much more general average; and that if allowance be made for unemployed time, 18s. a week, take the working trades all round, is not far from the exact amount. If a Stockholm working tradesman can earn 44*l.* a year, which we, however, much doubt, his command over the necessaries of life must far exceed that of his brother tradesman in London.

That there are many contradictions, even on subjects with which the author is most conversant, is easily observed in his book. In p. 184, speaking of the colonies in Lapland, he says, "They will be burdensome to the government when the crops fail; a circumstance which, in latitudes above 60°, is considered certain of ONE crop in FIVE." Yet in p. 215 he says, "It is reckoned that north of the 60th degree of latitude, of *five* crops TWO fail, two are moderate, and one a good crop; and two-thirds of the area of Sweden is north of this latitude."

In page 215, he says of the country of Dalcabria, "Our common daisy is very rare here." This implies that there were at least some daisies in the grass; yet a hundred pages further, being in the island of Gothland, he says, "The common daisy (*bellis perennis*), which I *never saw* in Sweden or Norway, is as common here as in our grass fields."

This is a proof of the great haste and want of consideration with which the present volume was got up.

In p. 97, speaking of a jury trial, in which an editor was condemned, he says, "When we find the name of Berzelius on the list of the jury, it is impossible to believe that the jury was packed, or their verdict partial;" yet in the very next page he states, that two-thirds of a jury are sufficient to find a verdict, and nine is the number of jurymen. If, therefore, we are even to assume that Berzelius, because he is a man of

science, is incapable of being biassed by court influence, still eight, seven, or even six of his fellow jurymen might have been sufficient to render an unjust verdict,—as, from Mr Laing's own account of the whole affair, we should suppose this one to have been.

Mr Laing complains of what he considers to be a great oppression,—that the Swedish peasants have to support, not only the clergyman, but also the sexton, the midwife, the vaccinator, the doctor, and the writer. This complaint proves a disposition to find fault with every mode at variance with that to which he had been accustomed. He does not attempt to show that the expense of these functionaries was greater than what the peasantry in other countries have to pay individually for such services when they are required; and it may very possibly be the case that providing for them by a rate on the parish, to be ready to serve all who have occasion for them, is the most convenient for all parties. No doubt the Swedes think so, and Mr Laing does not attempt to prove that they are in error.

We think it has been sufficiently shown what degree of dependence should be placed on the "facts," "observations," and "comparisons," both large and small, promulgated by Mr Laing, and the disheartening deductions he would have us draw from such unstable and shifting grounds. His statistics of the amount of crime in Sweden must be regarded as one of those quicksands of science by which the vessel of social progress might be for awhile endangered or retarded, but for a timely exposure.

SKETCH OF A PLAN FOR THE PROMOTION OF THE FINE ARTS.

TO THE EDITOR OF THE POLYTECHNIC JOURNAL.

Sir,—In accordance with my promise, I have prepared the following sketch of a plan for the encouragement of the fine arts. The first thing which appeared requisite, was to draw up a summary of the circumstances which have attended their progress at various periods and in all countries, so as to determine what is conducive to their prosperity, and what to mischief. This appeared the best way to control theory by experience. The result of this inquiry is as follows:—

In Greece.

Sparta, under aristocratic kings, with the same religion as Athens, but without commerce, produced no talent in the fine arts.

At Athens, under the republican government or the laws of Solon, that is from 510 to the time of Pericles, a period of only 60 years:—Encouragement was national, religious, and commercial, instruction private, and the standard of aggregate talent rose to 25.

In Italy.

Under foreign dominion and church supremacy, from the year 1002 to 1250, encouragement was imperial or religious; the aggregate of talent, 5 or 6.

From 1250 to 1536, under commercial republics and the church, encouragement was national, religious, and commercial; instruction private; talent rose to the standard of 20.

Again, under German and ecclesiastical dominion, without commerce, the arts fell; but about 1570 the energy of Ludovico Carracci, by the application of free discussion between artists and men of science, and with some encouragement from the church and private instruction, they revived, for about 40 years, to a standard of 14, and again fell to 6 or 8.

In France.

Francis the First endeavoured to introduce the arts into France about 1520. From that date up to 1600 encouragement was royal, instruction private. J. Gougeon, J. Cousin, and two or three more clever men were produced, but the general aggregate of talent was not above 10.

From 1600 until 1650, under a limited monarchy, commercial and religious freedom, encouragement was religious and commercial, instruction private, amount of talent, 14. The principal artists of that period were Valentin, Mignard, Dufresnoy, Claude Lorraine, Poussin, Lesueur, Lebrun, Coypel, Perrault, Mansard, and the Audrans.

Under Louis the Fourteenth a new system was adopted; commerce and religion were coerced, and the fine arts were placed under the care and control of a Royal Academy. Encouragement was royal and religious; instruction privileged. Average of talent, 10, 8, 6, by a gradual decay. The principal artists produced were Jouvenet, Watteau Delafosse, Santerre, Oudry, Le Nain, Vanloo, Boucher, Subleyras, Pierre, Le Doyen, Coizevox, and Ledoux.

Another great change took place from 1790 to 1795, under the republic; up to 1805 encouragement was national, without religious or commercial support; instruction was partly public, but mostly private; amount of talent, 12.

Since the above period (1805) court patronage has superseded national encouragement; instruction remains partly private, and partly privileged and public; the amount of talent is rather lower, say 10, with a tendency to corruption and decline.

England.

Under the Stuarts encouragement was royal; no instruction; talent exotic.

From 1700 to 1750, encouragement private and commercial; instruction private; aggregate talent produced, 10.

From 1750 to 1768, encouragement was commercial or popular, under the guidance of societies such as the "Dilettanti," the "Society of Arts," &c.; instruction private or mutual; amount of talent rose to 14; principal artists produced, Mortimer, Hussey Wright, Reynolds, Gainsborough, Wilson, Barry, Stubbs, Nollekins, Banks, Bacon, Flaxman, Athenian Stewart, Strange, Woollett, Earlom, and Bewick.

During the last seventy years encouragement has been royal and commercial; instruction privileged, but in part private or mutual. The talent produced under public or privileged instruction averages about 8; that from private or mutual instruction, 11.

From the above view, it is evident that a free commercial country like our own, with full exercise from competition and mutual instruction, with religious feelings and national excitement, has every chance of excelling in the fine arts.

Similar circumstances raised the republic of Athens to a supremacy of talent; the same effect, from like causes, had been produced at Rhodes, at Ephesus, at Cos, Samos, Egina, and in many other states of antiquity, and in modern Italy,* in France, and in our own country, success or failure may be traced in every case to the efficacy or want of some of those motives. Privilege has everywhere been detrimental; a free competition of energies, under a wholesome general impulse, always such cessful.

Among the attempts to cultivate or foster the arts, the means adopted by Ludovico Carracci, by the London Society of Arts, by the French Institute and the school of Dusseldorf, exhibit examples, in various ways successful; and from a careful application of the experience thus afforded much good might be effected. Such is the foundation of the following plan for a Society (unlimited) to consist of annual subscribers, artists, and amateurs, as far as possible literary or scientific, each to be inscribed at his admission under the particular head of his individual pursuit, and to continue so, unless changed according to the decision of a general meeting.

No life subscribers to be received, as experience proves the common practice to lead to improvidence and ill-will.

All members to have equal rights, and to speak or vote at the general meetings.

The general assembly to annually elect a president and vice-presidents; also two secretaries, one for general business, and one for correspondence on science and art, particularly with foreign countries; likewise the following committees: a committee on painting, one on sculpture, one on architecture, and one on engraving; besides these, one on history and antiquities, one on chemistry, one on general information and manufactures, and one for the business of the society.

These eight committees, with the two secretaries, to form a general supreme committee to manage for the society.

Ordinary meetings to be held, at which, in addition to the incidental information on art or science from various parts of the world, a paper on a particular subject shall be read and opinions heard; after which it shall be referred either to the committee which it properly concerns, or to some individual member of the society conversant in the matter of the communication for further consideration, and to report thereon at a future meeting.

Each committee on art or science to have in rotation the arrangement of a particular ordinary meeting, so that each department may have the opportunity of supplying its regular contribution of information.

Each subscriber to be entitled to introduce a friend to the ordinary meetings, and the committee of arrangement for the evening to be allowed to give, in addition, admissions. Facilities to be allowed to

* Ancient Rome, like Sparta, was aristocratic, not commercial or eminent in art.

visitors to favour the meeting with useful remarks and information, as is done most liberally at the Institute of British Architects. The press to be generally invited.

In addition to the ordinary and other general meetings, there should be one *public meeting* annually, at which the public should be made acquainted with the proceedings of the society, its objects and utility.

Such is the sketch of a plan for encouraging the arts in a liberal and useful way. The principle is the same that gave rise to assemblies of philosophers (without protection or privilege) in the seventeenth century; the same that enabled Carracci to stem the torrent of national degradation by the collection and dissemination of sound knowledge, and by discussions to which "*not only painters, but men of learned professions,*" brought the product of varied experience and the zeal of honourable emulation in the cause of truth. The popularity of the Society of Arts would be combined with the method and individual responsibility adopted by the French Institute, without the interference of a court, or restriction of numbers.

The various points of publication, exhibition, and special instruction, are of less importance; they may be spoken of hereafter; in so doing, it will be well to attend to the indications of the historical summary, and in every sense to avoid checking individual exertion; but, on the contrary, whilst, in the words of Delaplace, we "dissipate prejudices which have too long reigned, and which the strongest minds have not been able to resist," it must never be forgotten that success must depend on the proper direction, not the absorption of individual energy.

Something is required to rouse us from an apathetic sense of false security; to excite us to meet the coming competition with foreign talent; to enable us to maintain the rank that British ingenuity and British ardour have achieved among nations. Let others communicate their suggestions with as little reserve, and the object of this paper will be accomplished; for Englishmen, when once they begin to think and to resolve, are not long in discovering the best mode of carrying out their intentions.

A Fervent Admirer of the Fine Arts.

EXHIBITIONS OF NATIONAL INDUSTRY.

TO THE EDITOR OF THE POLYTECHNIC JOURNAL.

Sir,—In the first Number of 'The Polytechnic,' in reference to the "Exposition Industrielle" at Paris, you express a doubt that "the first notion of publicly exhibiting objects of industry" belongs to France.

As this is a subject which has during the greater part of my life attracted much of my attention, I beg to submit the following history of those highly important exhibitions, which have in both countries done much to spread and excite knowledge, comfort, and genius, which combine liberality and talent, and—now more than

ever—prompt France and England to compete in glorious emulation for the highest rank among civilized nations.

Baptista Porta's publication of the proceedings of the Natural Philosophy Society, called *Academia Secretorum Naturæ* (which met at his house), early in the sixteenth century, produced an extended desire for scientific knowledge all over Europe, and the works of Lord Bacon and others having determined the principles upon which knowledge should be prosecuted, France and England became rivals in science; the first formation of the Academy of Sciences in Paris about the year 1638, and of our Royal Society in 1645, placed us in fair emulation. In process of time royal protection followed, and the proceedings became fixed, and, in some degree, immutable; but the advances of society and of commerce spread the demand for knowledge in this country until 1754, when the establishment of the Society of Arts in London opened the avenues of every kind of knowledge to the middle classes, dispersing all prejudice and exclusion. By the offer of rewards for ingenuity in machinery, in chemistry, manufactures, and in art—from the highest historical and poetical efforts down to designs for the cabinet-maker and upholsterer, the silversmith, the weaver, and the embroiderer—a collection of talent in every shape was produced annually before the numerous subscribers and their friends; and, besides, a rule of the society "*never to turn foreigners or mechanics from the inspection of the collections*," rendered their exhibition public and popular to the full extent that their premises allowed.

The following authentic statements will show what was the extent of encouragement afforded by the Society, and also the result of that encouragement.

In twenty years, up to 1766, the following rewards were given by the society:—

	£	*s.*	*d.*
Agriculture and Agricultural Instruments -	3,201	19	0
Colonies and Trade - - -	2,785	13	8
Mechanics - - - -	2,284	14	6
Chemistry - - - - -	1,315	5	0
Manufactures - - - -	2,026	1	0
Polite Arts - - - -	8,325	5	0
Miscellaneous - - - -	3,613	0	0
Total - -	23,551	18	2

besides 130 gold medals, 46 silver, 17 gold palettes, and 84 silver ditto.

Among samples of the various rewards were, a new construction of an arch, a diving-bell, carriages of various constructions, cranes, compass and protractor, engine for polishing glass, harpoons, hinges and locks, jacks and blocks for ships and ship-builders, gold, silver, and iron wire drawing; machine for planing cast iron, for dressing and thrashing corn, ditto for winnowing, new invented hydraulic machine, a machine for laying in grounds for mezzotinto, ditto for

raising up water to the upper part of houses, cyder-mill, saw-mills, machines for saving the lives of men on board ships stranded on a lee shore, ditto for fishing up goods from the bottom of the sea, a capstan of a new construction, a spiral wheel for raising water, index balance, quadrant, timepiece, floating light, designs for furniture, ditto for weavers and for calico printers.

It will, perhaps, be readily admitted, that these popular exhibitions of the industry and ingenuity of a country were the first serious establishment on principle; and surely its results, at a time when we took that start in advance of other nations which led to vast superiority in manufactures and commerce, speak forcibly in favour of the system pursued.

It does not appear that our neighbours followed the example thus set them for many years. The encouragement of luxuries and forced ingenuity had been adopted by Louis XIV at the instigation of Colbert, and for a century and a half that false system, so admirably exposed by Fenelon in his 'Adventures of Telemachus,' had been pushing out its roots to the injury of all that is really useful and of general advantage; the care of government being exclusively bent on a few manufactures of no general utility, carefully nursed in government hot-houses. The establishment of Sevres, the Goblins, the Royal Academies, &c., monopolized all the favour of a court that neither understood or attended to the wants of the community; whilst in England the energies of the people were effecting what governments had attempted in vain. But after the great convulsion that shattered the monarchical institutions had spent its destructive impetuosity, the energies of France were directed to the formation of public institutions of a popular character, and amongst these, exhibitions of all kinds were not neglected. Accordingly, by a decree of the National Convention of the year 1795, occasional exhibitions of the ingenuity and industry of the country were established. I have before me a *catalogue raisonné* of that which took place in September, 1798. It was held in a large building raised on porticoes or arches, in the Champ de Mars. Of the articles commemorated I select the following:—Watch and clock work, razors, files, black-lead pencils, stoves and boilers, copper-smithery, and hardware, locks, planitariums, carpentry and cabinet work, tin work, various mills, fire-arms, swords, specimens of stereotype and various printing, spinning machines and models of machines, woollen and silk cloths, cotton and silk stockings, gauzes and muslins, cotton spinning from Fonfrede, Pont-Audemer, Delaitres, &c., plain and printed cottons from the manufactory of Gremont and Barré, excellent broad cloths, specimens of beautiful glass, stoneware in imitation of the English, porcelain from Sevres and from the *manufacture* of Gerard and Dhel. Some of those from Sevres were in imitation of Wedgewood's ware. Of the works of that establishment, it is observed, that two kinds of porcelain are manufactured—soft and hard; the first is more showy, but the last approaches nearer to true and real porcelain. The forms, design,

colour, and gilding are entitled to great praise; but of the productions of the house of Gerard and Dhel, we are informed, "that it is better and more durable than that of Sevres. Their fine pieces did not experience any cast or blemish in the burning, which is not the case in other fabrics, the colours do not melt or run into each other, the shades of the colours were much more delicate and clear than in those of Sevres."

From that time increasing exhibitions of the kind have been got up. I witnessed that in 1802, and subsequent collections, in which several Englishmen's works were conspicuous, especially the Jouy printed calicoes, carried to perfection at Obercamp's factory, under the chemical direction of Mr Henry, the carding and spinning machines of Douglas and of Cockerell, and the admirable mechanical discoveries of James White, &c. Many extravagancies were no doubt attempted, both in regard to crude notions of invention and objects of manufacture too costly for real use, but produced rather to astonish and obtain celebrity; such as broad cloth at 300 or 400 francs per ell, or 12*l.* to 16*l.* sterling. But even these rhapsodies often lead to other improvements, and at least showed that individuals in competition are as capable of wonders as mighty monarchs.

Thus, what a popular society commenced in England has been carried still further by the encouragement of government among our neighbours. Under Napoleon several of those exhibitions took place at the Palais Bourbon, and in the square of the Louvre, &c.; but during his conquests or reverses, some irregularity often occurred, as the exhibitions depended on his sanction and caprice. An order for the special holding of one, dated Berlin, 1814, has deceived Mr Skene, who, in his evidence before the Parliamentary Committee, referred to it as the origin of the practice, though nineteen years later than the decree of the National Convention, and sixteen years after the first was carried into effect. Of late years they have been held regularly every fourth year, and, for the sake of space, they are again held in a vast range of booths, constructed on purpose, in the Champ de Mars.

In the meantime the exertions of our splendid and generous Society of Arts have not been allowed to continue the only source of encouragement or excitement among us. In 1767-1768 Royalty undertook to encourage the arts, and the establishment of the Royal Academy reduced the importance of the society so far as regarded fine art; and the higher departments being less attended to, those more immediately connected with our manufactures have received less attention. Again, about the year 1828, a society was formed for the especial purpose of permanent exhibition of the machinery and its products, that constitute the wealth and industry of the country. Premises were granted at the King's Mews; it continued but two or three years, when Mr Toplis started that in Leicester square, which also was unsuccessful. But in the meantime the Adelaide Gallery of Practical Science was formed, and the admixture of various objects of interest, of lectures, and explanations,

have rendered it highly useful as a daily means of disseminating a taste for knowledge. This valuable plan of affording opportunities, of following up the improvements of the age, has lately been imitated at the Polytechnic Gallery in Regent street; and a more unexpected effect has resulted from the visits of a publican of Bolton, in Lancashire. Charmed with what he there saw, he determined to impart the feeling of satisfaction to his friends and customers. At his return he set to work to imitate the mechanical contrivances at the Adelaide Gallery; he also became a purchaser of objects of natural history and of art, and after several visits to London, and one to Paris and Brussels, he has made his first floor rather a museum than a bazaar, and crowds are attracted for the sake of amusement and to satisfy their curiosity. Two other publicans in Bolton, and one or two in Manchester, have endeavoured to rival Mr Sharples in catering objects of curiosity for the amusement of customers; and his example contributed to the extensive display at the Mechanics' Institution, Manchester, where, in 1838, 1,700*l.*, and in 1839, 2,300*l.*, were received in sixpenny and threepenny admissions. Nor has this spirit of popular rational amusement stopped there. Sheffield, Leeds, Macclesfield, Derby, the Potteries, and Birmingham, have each had their exhibition illustrative of the manufactures and practical science of the age, and all with marked success.

Some of our journalists have indeed expressed disappointment at the exhibition of models during the late meeting of the British Association at Birmingham. Their objections to it are, that the collection appeared rather like a show to please the eye than a collection of models; and, secondly, that Birmingham had supplied but a small part of the talent therein contained. The first object of such exhibitions, and of the Association, must be to disseminate taste, and to place in comparison the improvements of various men in as many provinces and countries as possible. There can be no objection to an outward appearance of agreeable arrangement, if the real merits of each object are fairly submitted to inspection. In this respect no exhibition with which I am acquainted, has sufficiently attended to method in the arrangement of objects. In regard to works of art, sculpture is usually kept apart from painting, but painting, architecture, and engraving, are too often commixed; portraits, landscapes, and historical pieces of every description, are placed in dissonant commixture. With objects of mechanical ingenuity, the same confusion is generally a bar to fair and efficient comparison; for instance, a high-pressure steam-engine and a wine-filterer, improved castors and safety lamps, a machine for raising water and one for cutting soap, are placed together as though of similar interest. So far the managers of the late exhibition at Birmingham are as reprehensible as others; but, instead of blaming them for having furnished but a small part of the objects of interest it contained, it would be more rational to praise them for the liberality with which they have exhibited the works sent to them from London, Manchester, Sheffield, and other places. We have had the advantage of witnessing

the comparative merits of each collected at one focus at an intermediate distance, and the inhabitants of Birmingham have had the opportunity of comparing their own mechanical genius with that of other districts; they will, no doubt, improve thereby, and on future occasions send to other towns the results of fair emulation. The specimens, in every stage, of some of their best manufactures, were highly interesting; and the facility granted to visit their factories by Jennens and Betteredge, by Bills and Co., and a few others, forms a noble contrast to some of the old establishments, which still cherish secrecy long after they have been surpassed by more intrepid and liberal competitors.

I hope, sir, this account will lead to many inquiries as to the merits and effects of these exhibitions, and to an extension of that liberality which is at once honourable and conducive to national and improving prosperity.

I remain your very obedient,

G. F.

ON THE ASTRONOMY OF THE BOOK OF JOB.

By Mr J. Landseer.

(concluded from our last.)

We will now devote a minute or two to the illustration of this problem by the globe. First, we must see—what, in the globe which I produce, may be easily seen—that the north pole of the equator is brought, not under Cynosura or *Al-ruccabah* (its present place), but is carried back to *Kochab* (or the hinge, in the shoulder of Ursa Minor), where we must believe, because astronomers know, the equatorial pole to have been, at the far distant era when this book was written. We must then elevate this arctic pole to about 28 degrees for the latitude of the domicile of the afflicted patriarch; when, bringing up the Pleiades to the cusp of the eastern horizon, we shall perceive the nine several stars of magnitude which are engaged in the banded tail, *lesath*, or sting, of Scorpius, sinking in the west, one after another, precisely as they must have sunk in this oriental climate, and under these circumstances, forty centuries ago, when the poem of Job was composed.

If I mistake not, Ladies and Gentlemen, you will readily grant that no problem, and perhaps no other event, *of a date so distant*, has been, or can be, more completely solved. Yes, I believe I may say so, for I don't think a rational doubt can longer remain as to the meaning of the *Kimah* and *Kesil* of this important text; yet, since this is a rock upon which all the translators have struck, were it not desirable to set a beacon here; or that the bishops would set a beacon; or at least subscribe to mine? Will you then permit me, Gentlemen, to repeat, in the way of brief recapitulation, that the translators of

Job have been mistaken in supposing that the Hebrew word *Kesil* was, or could be, meant for Orion, or that loosening the bands of the former expressed loosening the belt of the latter; mistaken in supposing that two astronomical phenomena, occurring at opposite seasons of the year, were intended by the poet; and mistaken in supposing that that poet could possibly have intended to represent Jehovah as inquiring of the patriarch (Job) whether he had power to *violate* the laws of Nature or Providence. Instead of which we should understand the demand of the Deity, "Canst thou bind the sweet influences of Kimah and loosen the bands of Kesil?" as but a single question, referring to the Almighty power which it required to have originated those laws; and, as evidently alluding to the heliacal rising of the Pleiades (which were then termed Al Thu-*ryaya*, or stars of genial abundance, and to the simultaneous descent of Antares, and the stars which are posited in the tail of Scorpius. This planet of earth itself, being also posited in the sign Scorpio when the sun rises in Taurus; though, with this latter fact, it is not probable that the Arabian astronomers were acquainted.

Concerning the next point of controversy, I am decidedly of opinion that Mason Good is correct in construing the word Mazzaroth (which the learned seventy, and those who prepared our common English Bible, did not attempt to translate, though it was more easily translateable than Kimah, Kesil, and Ayish),—Good, I shall venture to aver, is correct in construing this Hebrew word (Mazzaroth) to mean the Zodiac; and Dr Lee is again in error in supposing it to mean the Planets. How could it, indeed? How could any word employed in the place where we find Mazzaroth mean the planets collectively, since the positions of these, either in their orbits or in the system of the universe, can have no reference to, or connection with, the periodical returns of our seasons—the only seasons with which mortals are acquainted—and the word planets would therefore be irrelevant in this place. It would, too, be nearly *astronomic* as well as *grammatical* nonsense, to say, Canst thou lead forth the planets, each in its, or in his season? or, more generally, in their seasons; because nothing is known of *their* seasons. Had Mazzaroth meant the planets, the ultimate word of the interrogation would have been *revolutions*, or *orbits*. Canst thou lead forth the planets in their *orbits?* had been easily understood. On the other hand, —though this is of less consequence—to personify (according to Good's rendering), or assign *gender* to inanimate things, is idiomatic in the Pentateuch; whence we read in the Book of Exodus of the sacred candlestick, "with his lamps and *his* furniture;" and "the hangings of the court, *his* pillars," and so forth. The Zodiacal belt, then, is, in our text, treated of in like manner, but only as being the path of the sun, and therefore having reference to our terrestial seasons: besides which, Mazzal-oth—as the word is written elsewhere in the Scriptures, literally means *starry signs*, which seems to preclude further occasion for dispute, or necessity for elucidation, and on the whole to justify us in inferring the true meaning of the Deity's question to be simply, "Canst *thou* lead forth the starry

signs, each at that periodical or annually returning season when it is in conjunction with the sun ?"

Now, this very ancient recognition of the Zodiac, and of the consequent co-existence of astronomic science, corresponding, as it does, with the text presumptively taken from the Sabæan creed, and introduced into Genesis, that the stars "were for *signs*, and for *seasons*, for *days* and for *years*, is itself, perhaps, *the most curious* antiquarian fact in the whole string of the interrogations here uttered by Jehovah. Of sculptured astronomical monuments, coeval with, and even some of them anterior in their production to the Book of Job, I have myself discovered many — here are some of them [the lecturer here exhibited a string of six Babylonian cylinders]—and had the honour of explaining a few; which, however, not being already conventional among schoolmen and their creeds, are but beginning, like the facts which have resulted from the researches of modern geologists, to obtain a sort of tardy and reluctant admission among the classic scholars and churchmen. With my engraved Sabæan cylinders — I mean those which I have had the honour of introducing to the notice of the public—these two *literary* monuments—the texts of Genesis and Job, and the most ancient proper names of certain towns, cities, temples, and mountains, which were the primeval seats of science, such as Gilgal, Rimmon, and the Beth-shemish, and Asteroth Karnaim of Canaan—precisely correspond. But we may not digress here. We have another critical inquiry concerning the astronomy of Job to attend to.

With regard, then, to that next member of the sentence in the 38th chapter, which is our present subject, Good has followed the authorised bible version, and has written, "Canst thou guide Arcturus and his sons?" whilst Lee, considering it as a continuation of the preceding question, has added, "Or console Ayish for her children?" "Wilt thou bring the planets, each in its season, or console Ayish for her children?"

What should we English readers understand? Not Arcturus certainly, since Ayish is the word employed in the Hebrew original, and the author of Job could know no more of Arcturus than of Orion, Arcturus having been a metamorphosed Grecian bear-hunter of a much later age. Well, but Arcturus is a star of magnitude; and if Good and the bible are right with regard to the identity of the star, its name will not be worth quarrelling about, the translators might say. True, but they are *not* right as to the star. Arcturus never was a leading star, and has no train of smaller stars, which might be analogically termed his or her sons. On the contrary, it is a star so solitary that Aratus says of it—

> "Arcturus with no other star combines,
> But, in itself a constellation—shines."

Neither are we at liberty to imagine that any stars have disappeared from this quarter of the heavens, that might justify the idea of consoling Ayish or Arcturus for the loss of his or her children, if, indeed, such an idea were compatible either with the facts of the celestial phenomena or the poetry of the skies.

After all these sceptical acknowledgments, I can only fill up the hiatus with a conjecture, concerning the soundness of which gentlemen must judge for themselves.

The literature of Edom, alas! is lost, excepting this poem of Job; which stands alone, like a hoary pyramid, in one of its sandy deserts; and we know not the local proper names which either the Chaldeans or the Idumean astronomers, gave severally to the stars of magnitude; but we know from the mathematical rules of the science, that, between seven and eight centuries before the Pleiades became the place of the vernal equinox, the Colure must have cut across Aldebarân and the Hyades, and we know that at that very remote period four stars of the first magnitude, marked with emphasis and precision, those splendid points of the Zodiac which were intersected at the cardinal seasons, and esteemed the gates or hinges of heaven: we know, moreover, that these brilliant stars have since been named—*Aldebarân* in ♉, and *Antares*, in ♏, for the vernal and autumnal equinoxes; and *Regulus* in ♌, and *Fomálhaut* in ♒, for the summer and winter solstices. Now, Aldebarân (an Arabic word), is literally the leading star—the star which, at the annual season of its rising with the glorious sun, by leading forth the host of heaven, or Sabaoth, marked the commencement of a new year; and my conjecture is that Ayish was the primitive Idumean name of this brilliant leading star, the Hyades, by which she is surrounded, being esteemed her sons or children, and that this ancient place of the vernal equinox must have retained a certain dominion over the minds and habits of those who looked with veneration to the stars, just as "old style" was quoted among the moderns three quarters of a century ago, and when, for a similar sidereal reason, the commencement of the year was altered. Here, then, as in what I am about to advance, we have the pleasure of recognising the superior accuracy of Professor Lee in his retention of Ayish. Had any alteration been required here, it should not have been to Arcturus, but, if I am right, to Aldebarân, the primitive leading star, whose supercession by the Pleiades would further countenance the employment of the word "console" in this place. But it would surely have been better throughout the succession of deific interrogations, to have transferred to the English text all the antique proper names—Kimah, Kesil, Mazzaroth, and Ayish—illustrating their modern scientific meanings, by notes.

There remain a few words of our text to complete the important paragraph which the poet has put into the mouth of Jehovah, concerning the meaning of which the several translators do not differ. The Deity demands of the patriarch—"Knowest thou the laws of the heavens? Hast *thou*, forsooth, appointed their dominion over the earth?"

The very question, taken with the authoritative style of it; as well as the mysterious nature of those laws, imply, of course, that Job did *not* possess this knowledge: yet is it to our subsequent attainment of the knowledge of one of those laws—that of the pre-

cession of the equinoxes—that we are now enabled to reckon retrospectively, so as to ascertain the period wherein the venerable patriarch lived, and when the Almighty is supposed by the poet to have condescended to accommodate himself to the ways and the language of men, and to have uttered these words from out the dark-rolling clouds; which awful event and subsequent attachment lead us by an easy collateral transition to infer that another of the laws of Providence is the gradual development, from time to time, and through the agency of human instruments and scientific institutions, such as this wherein you are seated, of knowledge, and of the infinite attributes and omnipotent power of the Deity; so that, in the language of the sublime work before us, we may "by searching find out God; though, being finite, we can never find out the Almighty to perfection," for to know Omniscience in this comprehensive sense would literally be to be ignorant of nothing.

The starting-point of the Sabæan, or solar and sidereal year, in the spring season, when the days and nights were of equal length, is well known to have formerly been, as I have before stated, in the sign ♉; and we have seen that Ayish or Aldebarân (the Alpha of that constellation) obtained hence its designation of the leading star. Great numbers of the sculptured gems and other monuments of Egypt, Assyria, Persia, and other Oriental countries, which time has spared, attest, while they commemorate this fact or phenomenon, in the most decided manner, which must have taken place about 48 centuries ago.

And now, concerning the period wherein the author of this admirable book has placed his hero. Or, if you prefer my saying so, concerning the time in which the patient patriarch of integrity and affliction lived—for I do not intend to discuss the question, whether ornot Job was a real character; but merely to assert the probability that he was (like Achilles, Ulysses, and our own Arthur) a real personage elevated to heroism by the divine art of poetry, or rather by the inventive genius of the very earliest of the great poets.

According to the book of Genesis, the antediluvian patriarchs lived for long periods of time—long enough for the men of science among them to have become acquainted with the wondrous phenomenon of the precession of the equinoxes from personal observation; they were, therefore, perhaps informed of this apparent retrocession of the Zodiacal stars. But whether so or not, about seven centuries after the year commenced as I have just described, the Chaldean and Idumean astronomers must have observed that the Pleiades (or Kimah) had anticipated Aldebarân (or Ayish) which was now 10° below the horizon when the sun rose at the vernal equinox, and that this beautiful little cluster were now immersed in his morning rays, while the stars of the Lesath of Scorpius (or the Kesilim—so termed by Isaiah) were sinking in the occident. This concurrence then, of the heliacally rising and simultaneously setting stars, marks on the celestial globe, the *era of Job*, and not only gave rise to the interrogation, "Canst thou compel the vernal

influences of Kimah and loosen the *bands* of Kesil?" but affords that astronomical species of argument, which Sir Isaac Newton preferred to all others—whereby to ascertain the much controverted period when the patriarch lived.

Now the colure, or point of intersection of the vernal equinox, has since this state of the celestial phenomena moved through 57° to the farthest stars of Pisces, which number (of 57) multiplied into the rate of precession (71 years to a degree) gives a result of 4047 years, and carries back for the era of Job, to the time of Terah, the father of Abraham; while, according to the computation of Professor Lee, founded, however, on quite other data, this extraordinary book was produced, and the venerable patriarch himself lived (for *he* makes Job to have been his own biographer) in the time of the twelve sons of Jacob.

Tabular view of gradual decrease in the longevity of post-diluvian patriarchs.

	Years.
Shem (born before the flood) lived - -	600
Arphaxad - - - - - - -	438
Peleg - - - - - - -	239
Serug - - - - - - -	230
Job - - - - - - - -	215
Terah - - - - - - -	205
Abraham - - - - - - -	170
Jacob - - - - - - -	147
Levi - - - - - - - -	137
Moses - - - - - - -	110
David - - - - - - -	80

But I consider these results, though they do not exactly synchronise, as a pretty near approximation to each other, considering that we are in quest of a date so distant; and when we take into the account, that although allusions are made in the poem of Job, to Adam and to Noah, yet that there are none whatever to Abraham or his offspring; and when we further advert to the gradual shortening of the duration of human life which took place between the first post-diluvian ages and that of David, I think we shall not be far from the mark in believing the afflicted patriarch of patient integrity to have been contemporaneous with, or perhaps a little before, Abraham and Melchizedek; his old age probably corresponding to the period of their youth.

I am entirely of opinion with the learned professor (Lee), that there existed "patriarchal scriptures," anterior to the time of Moses, which were known to the author of Job, but in fact these early writings are little more than genealogical registers, till we arrive at Job and Abraham, with whom biography begins. Some allowance, too, we may reasonably make in settling this chronological question for those habits which, as I have already noticed, permit us to change old calendrical reckonings but tardily. Even down to

Virgil's time, we know that there were Roman poets who continued to write, and perhaps there were among the unscientific multitude those who continued to believe, that—

"With his horns *the Bull* unbarr'd the year;"

a verse which I cite from Virgil himself. Taurus certainly did unbar the year with his horns when the Pleiades, or rather when Aldebarân rose heliacally; and even now and in modern Europe, schoolboys are taught to begin their enumeration of the 12 signs with Aries, though his precedence has long since passed away. For these reasons, I say again, that Professor Lee's estimate of the era of Job is not far from being astronomically corroborated; or, that it *is* corroborated with as much precision as we could reasonably expect concerning a date so distant.

[We have received the following communication upon this subject from a correspondent.]

THE conclusions come to by Mr Landseer as to the true meaning of the Hebrew terms *Kimah* and *Kesil*, which the translators generally have considered to signify certain constellations, appear so much at variance with the simple language of the original, that it may be well to examine the subject. I agree that there is no foundation for the Greek names being adopted, as Job's biographer lived some ages before they existed; but it appears, on examining the terms themselves, that neither is there any ground for understanding them to signify any constellations whatever, and certainly not those adopted by Mr Landseer. First as to *Kimah*. It is compounded of *Ki* or *chi*, signifying "heat," and *mem*, which denotes "during," or "all the time," and may be understood as "heat-during," that is, the SUMMER. The term *Kesil* is compounded also of *chi*, "heat," and *aish*, "fire," with the negative *al* postfixed to denote the absence of these effects. It will thus become chi-aish-al, or, when abbreviated, *chi-'sh-'l*, and if we substitute *samech* for *shin* (and "there are strong reasons," says Ainsworth, "to think *samech* only a secondary letter,") we shall find the word become *chi-s-'l*, which implies merely the heat of the fire of heaven absent, the term *aish* implying a *heavenly* fire or star, whence the Chaldean expression *Shemiah*, or "multitude of fires," signifies the heavens, and *Shemesha*, the "fire of many fires," is the sun. It results that *Kesil* is the WINTER, and is the antithesis of *Kimah*, the summer. And the poet, who had just beautifully described the power of God on the atmosphere, by asking, "Out of whose womb came the ice? and the hoary frost of heaven, who hath gendered it?" very pertinently inquires, "when the waters grow opake as a stone, and the surface of the deep becomes fixed, canst *thou* compel the sweet influences of 'summer, or loosen the (icy) bands of 'winter?'" If we examine the other instance in which the

same writer uses the same terms, we find he couples "Ash" (supposed to be a *northern* constellation, and therefore, though I know not why, Archorus), with Kesil, the winter; and the "chambers of the *south*" with Kimah, the summer. The prophet Amos also uses these names, and evidently means the summer and winter. For if we read his 8th verse, 5th chapter, denuded of metaphor, it will run thus: "Seek him that maketh 'summer and winter,' that turneth night into day and day into night," a more palpable evidence of power than making *two* constellations only. We then perceive the full force of the prophet's declaration, "The Lord is his name."

A few words will suffice to overthrow Mr Landseer's hypothesis, that Job alluded to the sun's presence with the Pleiades, or the cosmical setting of Antares, as the "bands" of summer influence, or winter's cold. It is manifest that the winter could not have alluded at all to the winter in *his* part of the world; for in or near "the latitude of 28° north," there is no winter wherein "the waters are hid as with a stone, and the face of the deep (sea) is frozen." The only seas near are the Persian Gulf and the Red Sea, to neither of which does this description apply, nor ever did apply, unless we suppose the angle of the pole at least 10 degrees different from what it now is. For in latitude 28° the meridian altitude of the sun was never less, even in the time of Job, than 37° 52′ on the shortest day, which is within 36′ of its meridian altitude in London on the 21st March; and when the sun crosses the equator in that latitude, his meridian altitude is 62°, which is the utmost he attains in London on the longest day; while during Job's longest day the sun's altitude was 86° 8′, being within less than 4° of the zenith. All this proves that, as a poet in Iceland might describe tropical phenomena, so did Job describe those which applied to the Arctic circle; and, therefore, it is absurd to apply the astronomical phenomena of *his* latitude to explain those circumstances which could never there occur.

As to *Mazzeroth*, it is composed of 'M, the multitude; az, or *aish*, fire; (the fires, or stars of heaven) *or*, light or wisdom, (alluding to the Chaldean doctrines,) and *oth*, the ancient plural termination, equivalent to *im*. It means, therefore, just, "all the fires (or stars) of heaven and their sundry influences," on the seasons, according as the sun is with them; in proof of which is the expression "Canst thou bring forth Mazzeroth *in his season?*" or canst thou "guide *them?*" which pronoun has been rejected, and the words "Arcturus with his sons," inserted, thus making that confused which in the original is clear.

R. J. M.

[Mr Landseer having an undoubted right to a rejoinder, and not wishing to continue the subject beyond the present month, we for-

warded a slip of R. J. M.'s paper to that gentleman. The following are his remarks.]

The writer, perhaps somewhat more confidently than the occasion demands, says, "A few words will suffice to overthrow Mr Landseer's hypothesis, that *Job alluded* to the sun's presence with the Pleiades, or the cosmical setting of Antares, on the bands of summer influence or winter's cold." I never wrote the *bands* of *summer's influence*, but of the *lesath* of Scorpius. "It is manifest that the winter, &c."

Now all this I substantially knew, that is to say, the objections derived from the Arabian climate occurred to me, as to R. J. M., whilst studying the text; but I reflected that the interrogation upon which this discussion depends, came from—whence? From the mouth of Jehovah himself. It is not Job's allusion (as R. J. M. states): It is the Deity himself who demands of the patriarch, in the presence of his friends, "Canst *thou* bind the sweet influences of Kimah and loosen the bands of Kesil?"

The Almighty assumes—I am not going here with an air of triumph to inquire what modern critic shall presume to gainsay him? We know that it is, in fact, a poet who assumes that it would not be improper in himself to suppose, that Omniscience assumed that Job was technically acquainted with those concomitant celestial signs of the changing seasons, which were then styled the Gates of Heaven; namely, the zodiacal stations of the sun at the seasons of the solstices and equinoxes, which of course were the same all over the world.

In objecting that the phenomena of winter must have been unknown in the latitude and country of Job, R. J. M. controverts not Mr Landseer, but the author of the book of Job, who repeatedly mentions and alludes to snow and ice. In his defence, or in explanation, may be mentioned, that snow and ice are not unknown in the mountainous regions of Arabia, as well as elsewhere in the loftier regions of the torrid zone, and that I do not suppose the Hebrew word, which in this text has been translated *deep*, means the sea; I suspect it was a generic expression, common also to lake, pool, and tank. It is known that the Arabians of the earliest ages constructed immense reservoirs.

The last position of R. J. M., namely, that "it is absurd to apply the astronomical phenomena of Job's latitude, to express those circumstances which could never there occur," is irrelevant, because I have not so applied the astronomic phenomena. As I have said above, and as I am sure R. J. M. must know, the same celestial signs of the coming seasons were common to all latitudes.

BEETHOVEN.

BY GEORGE HOGARTH.

The biography of great artists is one of the most important branches of the literature of Art. A knowledge of their lives and fortunes is interesting to those who regard their works with delight and admiration; and much light is thrown upon their genius and character as *artists,* by the circumstances of their personal history, and an observation of their dispositions, habits, and characters as *men.*

There is no musician whose biography would be more interesting under the one of these points of view, and more instructive under the other, than the illustrious Beethoven. But an account of his life yet remains a desideratum in musical literature. Till within a very recent period, all that was known of him personally was contained in the bold German pamphlet of Schlosser, and the interesting, but excessively slight, sketch by the Chevalier Seyfried, prefixed to a posthumous work, entitled '*Beethoven's Studien in Generalbasse*,' or Studies in Thoroughbass, Counterpoint, and the Theory of Composition, published at Vienna in 1832. This publication, we must observe in passing, considered as a book of instruction by Beethoven, would do no honour to his memory; but in truth these 'Studies' were a parcel of his juvenile exercises when he was studying under Albrechtsberger, found, along with a great deal of other rubbish, among his papers, after his death, and vamped up and published by the Vienna music-seller who bought up all the manuscripts he had left, as a trading speculation. It is to this enterprising publisher, too, that we are indebted for the appearance of various other posthumous compositions of Beethoven, particularly certain Quartets which have been lately attempted at some of the London concerts, to the admiration of a number of our *dilettanti* (though the majority, we believe, found them incomprehensible,) but which are now understood in Germany, by those best acquainted with the subject, to have been manufactured from scraps and fragments found in Beethoven's portfolios, and never intended by him to see the light.

The above are the sources from which all the meagre biographical memoirs of Beethoven that have yet appeared have been drawn. They afford information respecting the generally-known circumstances of his career as an artist, which are few and simple, but they are silent as to all those particulars of his private life which are necessary to enable us, as it were, to form his personal acquaintance. This, the most interesting branch of his biography, could be furnished only by those intimate friends who enjoyed his most familiar intercourse. Beethoven, who withdrew himself more and more from the world as his increasing deafness deepened his melancholy and heightened his disinclination for society, was accessible only to a very few. The public admired his unrivalled works as they appeared in quick succession, but knew little or nothing about the author. He rarely emerged from his seclusion, and, we have been told, was hardly known, even by sight, in the city where he passed almost the whole of his life.

Lately, however, this want of information regarding the private life and character of Beethoven has been in a considerable measure supplied by two of his friends, who were well qualified to do so; the celebrated Ferdinand Ries, so long resident and so highly respected in this country, and Dr Wegeler, an eminent physician of Bonn, Beethoven's townsman and his friend from childhood. Ries, as is well known to musicians, was Beethoven's principal and favourite pupil. A few weeks before his own death, and aware of its rapid approach, Ries was desirous to leave a memorial of his illustrious master; and his last occupation was that of drawing up a sketch of his reminiscences. The manuscript was committed to the care of Wegeler, who prepared it for publication, with additional matter of his own; and the result of their joint labours appeared at Coblentz last year, under the title of '*Biographische Notizen über Ludwig van Beethoven*,' or, Biographical Notices of Beethoven.

This little book ought to appear in an English dress, and we are surprised that it has not yet done so, as it would be read with great interest and pleasure by every musician. Our present purpose is to avail ourselves of its contents, as well as various things in the correspondence between Goethe and Zelter, and in several of the foreign journals, in drawing up a brief sketch of Beethoven, containing particulars which will be new to most of our readers. We shall take it for granted, however, that they are acquainted with those occurrences of his life which have been long before the public.

Beethoven was born at Bonn, in December 1770. It has been said by a respectable authority (Choron and Fayolle's *Dictionnaire des Musiciens*), and, consequently, often repeated, that he was a natural son of Frederick William the Second, King of Prussia. We find that Beethoven himself was aware of this story. In a letter to Wegeler, written in October 1826, a few months before his death, he says: "I have long heard of this, but I have taken the firm resolution never to write about myself, or to answer anything that is said about me. I willingly leave to you the care of vindicating to the world the honour of my parents, especially my mother." The story, indeed, is a gross and absurd falsehood; and Dr Wegeler, by his details respecting Beethoven's birth and parentage, does not leave it a vestige of foundation.

At the age of fifteen Beethoven was appointed organist of the electoral chapel at Bonn, and, soon afterwards, the Elector's chamber musician. When Haydn, returning from his first visit to London, passed through Bonn, the young musician showed him a Cantata which he had written, and of which he desired the illustrious veteran's opinion. Haydn praised it highly, and advised the author to pursue a career which he had so well begun. This piece, however, was never published, or even performed; being found too difficult, particularly for the wind instruments. He thus showed, at the very outset, that disregard of mechanical facilities which has always been an impediment to the satisfactory performance of his music. At this period of his life he produced many compositions, most of which

remained in manuscript, and all of them were rejected by himself from the series of his works: his *opera prima* being a set of Trios for the piano-forte, violin, and violoncello, published at Vienna in 1795, and now in the hands of every musician.

Notwithstanding the favourable beginning of Beethoven's acquaintance with Haydn, their subsequent intercourse was less agreeable. Beethoven was sent by the Elector of Cologne to study under the greatest musician of the age; but they did not suit each other, and Haydn got rid of an untractable scholar by turning him over to Albrechtsberger. Haydn, it seems, desired that Beethoven should acknowledge himself as his pupil, and so describe himself in his earliest publications. Beethoven refused, saying, that, to be sure, he had got a few lessons from Haydn, but had never learned anything from him. When Beethoven had finished his first work, the set of Trios we have just mentioned, he played them at Prince Lichnowsky's, before a party of the principal musicians in Vienna. Haydn was present among the rest, and joined in the applause bestowed by the company on these charming productions. He, however, took the author aside, and advised him, most unaccountably, not to publish the third of the set, the well-known Trio in C minor. Beethoven, who knew well that this was the best of the three, paid no respect to the advice; and when he found his own opinion confirmed by the judgment of the public, he conceived the notion, which never afterwards left him, that Haydn had been actuated by a spirit of jealous rivalry. This he never forgave, nor did he ever lose an opportunity of making Haydn and his music the subject of sarcastic remarks and criticisms.

Beethoven submitted to Albrechtsberger's authority with little more patience than to that of Haydn. This master was a profound theorist, and taught the science in all its scholastic rigour; a method of tuition quite unsuitable to the modern state of the art. It is easy to imagine the impetuous pupil forced to bend under the yoke of antiquated rules which he felt to be mere pedantry, and was continually led, by his ardent imagination, to disregard. He was constantly, therefore, committing *errors*, which his teacher as constantly endeavoured to correct. Hence many disputes and some squabbles, though the scholar never lost sight of the respect and esteem which he owed to his venerable instructor. He completed his course, and carefully preserved the exercises he wrote under the eye of his master; scribbling upon them, however, many a sarcasm against theorists and their precepts. These are the exercises which (as already mentioned) were vamped up as a trading speculation into a posthumous work. It was a very improper publication, but still it is curious, as showing the young musician's contempt for some of the tasks which old square-toes imposed upon him. There is a chapter on *Canon*, for instance, containing examples of this kind of composition in all its absurd and puzzling varieties. In his enumeration of these varieties, he mentions "the numerical and enigmatic Canons, which, like everything that partakes of the nature of a riddle, are

easier to invent than to solve, and seldom yield any compensation for the time and trouble bestowed upon them. In former times, (he adds), people took a pride in racking their brains with such contrivances; *but the world is now grown wiser!*"—"What good," he afterwards says, "can result from all this? *Multum clamoris, parum lanæ!* Possibly I may try my hand at it some of these days, when I have nothing of a more reasonable nature to occupy my time. At present, thank Heaven, I am not in that predicament, and it will be a pretty long while, I suspect, before I am.".

In conversation, too, among his musical friends, Beethoven took pleasure in ridiculing the strict precepts of the schools. When they ventured to point out any infringement of them in his compositions, he used to treat them as pedants. When in good humour on such occasions, he would rub his hands and exclaim, laughing heartily, "Oh, yes, yes—you are quite astonished, and at your wit's end, because you cannot find this in one of your treatises on harmony!"

"One day," says Ries, "when we were taking a walk together, I spoke of two *consecutive fifths* in one of his first set of violin quartets (that in C minor), which produce a striking and beautiful effect. Beethoven did not recollect the passage, and would have it that I was mistaken in saying that there were fifths in it. As he usually carried music-paper in his pocket, I asked him for a bit, and wrote down the passage in four parts. Beethoven seeing that I was right, said, "Well, who has prohibited the use of fifths like these?" I was at a loss how to take the question. He repeated it several times, till at last I answered, greatly surprised at his putting it—"Bless me! they are forbidden by the very fundamental rules of harmony!" Still he insisted on knowing by whom: I said, "By Marpurg, Kirnberger, Fux, every theorist who has ever written on the subject." "Well," cried Beethoven, "*they* may have forbidden them, but *I* allow them!"

Rossini, who, notwithstanding the nonsense that has been written to the contrary, knew the rules as well as anybody, has been an audacious violator of them. He was a careless student, and used to annoy his master, the venerable Padre Mattei, as much as Beethoven did Albrechtsberger, trusting for his harmonial effects more to his own perceptions than to the *dicta* of theorists. When, in looking over his scores, he observed an infringement of some rule, instead of correcting it, he would mark it with a cross, writing on the margin, "*Per soddisfazzione de' pedanti*"—"For the satisfaction of the pedants!" The best and soundest rules—even those which are susceptible of the most general application—must sometimes yield to the impulse of that high order of genius which can "snatch a grace beyond the reach of art:" but the frequent disregard of the laws of harmony, as established and taught in the schools, which we find in the works of modern musicians, is in a great measure the fault of these laws themselves, many of which are no longer applicable to the practice of composition. We cannot, indeed, conceive anything more absurd than the present system of scholastic discipline

to which the young musician is subject. After his genius has been cramped and confined by a long course of precepts, restrictions, and prohibitions, founded on the practice of the seventeenth century, he is told that most of them are antiquated and obsolete, and that there is no longer any occasion to mind them. Did it ever enter into the head of a teacher of that art which has been happily called "the poetry of motion," that the best way to arrive at ease, grace, and agility, was to make his pupil begin, and continue for a long time, to dance in fetters?

Beethoven's unhappy malady, deafness, which so deeply affected his mind, and must have had no small influence on the character of his music, appears to have attacked him at an early age. In the following interesting passage from one of his letters to Wegeler, dated at Vienna in June 1800, he says that his deafness had been gradually increasing for three years.

"You desire to know something of my situation. Well, it is not so much amiss. During the last year, Lichnowsky, however incredible it may seem to you, has been a warm friend. If we have had any little misunderstandings, they have only served to strengthen our friendship. He has assigned me a pension of 600 florins a-year,* which I can draw so long as I have not found a place that will suit me. I can find for every one of my works six or seven publishers, and more if I choose. They no longer think of cheapening my goods: I fix my price, and it is paid. This, you see, is a fine thing. For example, I find a friend in difficulty, and my purse does not enable me to assist him; but I have only to sit down to my desk, and I can help him immediately. I am living more economically than formerly. Were I to make up my mind to remain here permanently, I should have a certain day allotted me every year for a concert. I have already had several; but unhappily the envious fiend, ill health, has deranged the men on my chess-board—that is, my hearing has been getting weaker and weaker every day for these three years past.

* * * * * *

"I may truly say that I pass my life miserably. For two years I have shunned society, for I cannot go about saying to every body, *I am deaf.* Had I followed any other art it might have done; but, in mine, it is an intolerable infliction. And then, my enemies, who are not few, what would they say if they knew it? To give you an idea of this incredible deafness, I may tell you that at the theatre I am obliged to get quite close to the orchestra in order to hear the performers. If I am at any distance, I cannot even hear the high sounds of the voices and the instruments. I am surprised that people have not yet perceived my infirmity; but as I was always somewhat abstracted, everything is set down to absence of mind. When a person speaks softly I can scarcely hear him: I hear the sounds, but not the words. And yet if any one speaks loud I feel it insupportable. What will come of this, God only knows! I am often tempted to curse my own existence. Plutarch has taught me resig-

* The florin is nominally about two shillings English; but, from the depreciation of the Austrian paper currency, it seems to have been frequently of not more than half of the above value. We may estimate this pension at between 40*l.* and 50*l.* sterling.

nation. I desire, if possible, to bear my lot with fortitude; but I must look for many moments in my life when I shall be the most wretched of God's creatures. I pray you to speak of this to nobody, not even to Leonora:* I mention it to you as an inviolable secret. Should I remain in this state, I will come to you next spring. You shall hire me a cottage in some pretty spot, and I will turn peasant for six months, which may perhaps do me some good. Resignation—what a miserable remedy! but it is the only one I have."

Eighteen months afterwards, in November 1801, he writes again to Wegeler on the same subject. After speaking of various remedies—blisters, galvanism, &c.—that had been recommended to him, he says:—

"At present my life is somewhat more agreeable since I go a little more into society. You could hardly believe what a melancholy life I have led for these two years past. My deafness pursues me everywhere like a spectre. Shunning mankind, as I have done, I must have appeared a misanthrope, which I am far from being. This change has been produced by an amiable and charming girl, whom I love, and who loves me. Hence the few moments of happiness I have had for two years; and I now feel, for the first time, that I could find happiness in marriage. But alas! she is above me in rank, and besides, marriage for me at present is out of the question—I must labour to gain an independence. Had it not been for my deafness, I should, by this time, have roamed over half the world. That would have been the life for me: I have no greater enjoyment than in exercising my art, and displaying its splendour in public. Do not believe that I could be happy with you—what could make me any happier? Even your affectionate care would pain me. I should every moment read your compassion in your countenance, and I should only feel the more miserable."

This cruel malady continued to increase till at last his deafness was nearly total. Nearly ten years afterwards we again find him writing (in 1810) to Wegeler:—

"For some years I have ceased to lead a tranquil and retired life, and have been dragged by force into the great world; but I have never acquired a taste for it—quite the contrary. Nevertheless I might be happy, nay, perhaps one of the happiest of men, were it not for the evil genius that has taken up his abode in my ears. Had I not read somewhere that no man ought voluntarily to quit life as long as he can do a good action, I should long since, by my own will, have ceased to live. Oh, how beautiful is life—but mine is poisoned for ever!"

Zelter, writing to Goethe in 1819, says:—"Beethoven is still in the country, but nobody knows where. He has just written from Baden to one of his friends in Vienna, and yet he is not at Baden. His temper is said to be insupportable; some, indeed, will have it that he is mad. But it is easy to talk in that way, God forgive us! The poor man, it seems, is completely deaf. Figure such a situation—to see his fingers on the keys, and not hear a note! He gave a curious specimen of his absence of mind the other day. He went into a restaurateur's, sat down at a table, and after having remained pensive and motionless for an

* Madame Wegeler.

hour, called the waiter. 'What have I to pay?' 'Why, sir, you have had nothing yet—what would you please to have?' 'Bring me anything you like, and go about your business.'" "In spite of the faults found with Beethoven," says Zelter in another letter of the same period, "with or without reason, he is at Vienna, an object of great respect and curiosity. He had promised, on some matter of business, to call one morning at the shop of Steiner, the music-publisher. Steiner was eager to tell that the great man was coming, for the first time, to pay him a visit at his little shop, which will not hold more than five or six persons. More than fifty made their appearance, crowding about the door, and standing in the street. They consisted of artists, men of letters, and persons of distinction in various ways, all waiting to catch a glimpse of the man so much heard of, but so rarely seen. But they waited in vain: Beethoven, fatigued with a journey the day before, overslept himself and broke his appointment."

It may be supposed that a man of Beethoven's temper was by no means amenable to criticism. Sometimes his friends wished to persuade him to make retrenchments in his pieces, when, though beautiful, they seemed too long, but they seldom succeeded. Beethoven defended every bar with parental eagerness; and the critic, if he persisted, was sure to bring on himself some rough language; for Beethoven, when in a passion, spared nobody. Sometimes, however, he would listen to these remonstrances; but he did not yield without a stout debate, and would never consent to abridge a movement, though he would withdraw it altogether from the piece, and substitute a shorter one in its place. Thus, in the well-known sonata in C major (Op. 53), there was at first a long *andante* in F. Beethoven, after keen discussions as to the excessive length of this sonata, replaced the *andante* by the little introduction which now precedes the *rondo*, and published the *andante* separately.

The most violent dispute of this kind took place on the subject of his celebrated opera *Fidelio*. This piece, which was originally called *Leonora*, had small success when first produced on the stage. Indeed it may be said to have failed, for it was withdrawn after the third representation. Two years afterwards it was determined to revive it, and two of Beethoven's friends, who took a strong interest in its success, undertook to remodel the *libretto*, the faults of which had contributed much to the failure of the piece. But changes in the text demanded changes in the music; and curtailments, too, were necessary. Curtailments! who was to be bold enough to propose curtailments to Beethoven?

By way of managing this ticklish matter, Prince Lichnowsky had a little meeting at his house to try over the music, and consider what changes were requisite. Besides the Prince and Princess, the party consisted of Messrs Collin and Breuning, the friends who had revised the *libretto*, the tenor singer Rœckel,* the bass singer Meyer, and the composer. At first Beethoven stood firm, and defended his music bar by bar, without, however, losing his temper. But when Meyer began to declare that whole pieces must be cut out, such as the principal air for the part of *Pizarro*,

* We have heard this respectable and excellent musician (who is now resident in London) describe this scene as Ries has done.

saying that no singer could give it any effect, Beethoven flew into a rage, and stormed at the whole company. They succeeded, however, in pacifying him, and he agreed to give up this air and put another in its place. The air which he substituted is that very noble one which is now marked No. 7, in the score. Once brought into a complying mood, Beethoven became wonderfully tractable, and the whole affair was arranged to general satisfaction. This rehearsal, disputes included, lasted from seven in the evening till two in the morning. The Prince then ordered supper to be brought in, and the night ended merrily.

Beethoven immediately set about making the changes agreed on. Among the pieces cut out there was a duet for two sopranos, an air, and a trio; a prodigious sacrifice for Beethoven! The opera was reduced to two acts, and, in this shape, performed with the utmost applause. But Beethoven had enemies; a formidable cabal was raised against him; and the opera, notwithstanding its first reception, had again only three representations. Beethoven's disappointment was extreme. He was at this time in very straitened circumstances, and had reckoned on considerable advantage from the success of the piece. The failure of his hopes disgusted him with his art; and it was a long time before he got over it, and returned by degrees to his musical occupations.

The original failure of this exquisite opera is one of those occurrences which we too often meet with in the history of the art. It was too much in advance of the period when it was produced, and could not be understood by the mass of the public. This failure took place in 1805: ten years afterwards *Fidelio* was revived at Berlin, and hailed with enthusiasm; and it was speedily received with acclamations all over Germany. It was not known in England till 1832, when it was first performed in the original language, by the fine German company engaged that season at the Opera-house by the enterprising but unfortunate Mr Monck Mason; and we need hardly remind our musical readers of the success with which it was more recently brought out, in an English version, at Drury-lane, and of the impression produced upon a long succession of crowded audiences by the lamented Malibran's beautiful representation of the most interesting of all heroines. *Fidelio*, unfortunately for the musical stage, is Beethoven's sole dramatic work. It was said, during the latter years of his life, that he was engaged in the composition of another opera, entitled *Melusina;* but nothing has been heard of it since his death, nor does it appear that any vestige of it was found among his papers.

We must devote another paper to the completion of this sketch, by exhibiting the peculiarities of Beethoven's habits, and some of the most remarkable features of his noble but eccentric character.

FALLING STARS.

The extraordinary appearances in the heavens, which astonished and alarmed the inhabitants of this metropolis in the night of the 3d of last month, will undoubtedly make an addition to the stock of facts and observations necessary in forming a theory of those meteoric phenomena which at present engage so much of the attention of philosophers. We extract the following particulars from the account in the *Times* newspaper :—

" Between the hours of ten last night and three this morning, in the heavens was observed one of the most magnificent specimens of those extraordinary phenomena, the falling stars and northern lights, witnessed for many years past. Its first indication was about ten minutes before ten, when a light crimson, apparently vapour, rose from the northern portion of the hemisphere, and gradually extended to the centre of the heavens; and by ten o'clock, or a quarter past, the whole, from east to west, was one vast sheet of light. It had a most alarming appearance, exactly like that occasioned by a terrific fire. The light varied considerably; at one time it seemed to fall, and directly after rose with intense brightness. There were to be seen mingled with it volumes of smoke, which rolled over and over; and every beholder seemed convinced that it was a tremendous conflagration. Thousands of persons were running in the direction of the supposed catastrophe; and the fire-engines belonging to various stations were horsed, and galloped towards the supposed scene of destruction, followed by carriages, horsemen, and vast crowds. Some of the engines proceeded as far as Highgate and Holloway, before the error was discovered. At two in the morning the whole of London was illuminated as light as noon-day, and the atmosphere was remarkably clear. The southern hemisphere, though unclouded, was very dark; but the stars shone beautifully. In the northern side of the heavens there was a continual succession of meteors. They apparently formed in the centre of the heavens, and spread till they seemed to burst. Myriads of small stars shot out over the horizon, and darted with such swiftness towards the earth that the eye could scarcely follow them: they seemed to burst also, and threw a dark crimson vapour over the whole hemisphere. At half-past two the spectacle changed to darkness; which, on dispersing, displayed a luminous rainbow in the zenith of the heavens, from which columns of silvery light radiated, intermingled with crimson vapour. Stars were darting about in all directions, and continued till four o'clock, when all died away."

There are accounts of the same phenomenon having appeared, during the night above-mentioned, in various parts of Europe, particularly at Thoulouse, and other places in the south of France.

The nature of these celestial appearances, and the connexion which seems to exist between the *aurora borealis*, *falling stars*, and *meteoric stones*, are involved in mystery which the efforts of scientific inquirers have been hitherto unable to penetrate. And the difficulty

is now increased by a circumstance, in relation to the *falling stars*, which has been but recently taken into account in speculating as to these meteors; namely, that their appearance is *periodical*, and chiefly takes place at certain times of the year.

The appearance of *falling stars* on particular days of the year has long been observed, but has been generally treated as a popular superstition, unworthy of the attention of philosophers. Its periodical character, however, is noticed by Musschenbrœck, in his *Philosophia Naturalis*, published in 1762. There is an old monkish manuscript preserved in Corpus Christi College, Cambridge, entitled *Ephemerides rerum naturalium*, a kind of calendar for every day of the year, in which, opposite to the *tenth of August*, there is the word "*meteorodes*," evidently alluding to the appearance of meteors as belonging peculiarly to that day. It is a tradition among the Catholic population of Ireland that the shooting stars, which appear in the greatest number at that season, are the burning tears of St Laurence, whose *day* is the tenth of August. Since attention has been drawn to the fact, it is remarked that a similar superstition or belief exists in Switzerland and other countries.

It seems now to be admitted that these appearances take place *chiefly* (though not exclusively) at two periods in the year—about the 10th or 11th of August, and the 10th or 11th of November. This conclusion is the gradual result of a variety of observations. The November period is deduced, in the first place, from the phenomenon observed by Humboldt and Bonpland, in Mexico, on the night of the 10th November, 1799. "Towards the morning of the 11th November," says Humboldt, "thousands of falling stars succeeded each other for four hours in the eastern sky with the greatest regularity from north to south;" and Bonpland remarked, that from the beginning to the end of the phenomenon there was not a space in the firmament equal to three diameters of the moon free from these meteors. Humboldt, by collating different observations simultaneously made in different places, found that this brilliant appearance was seen over a great extent of the globe—at the equator, in South America, at Labrador, and in Germany; embracing a space of 921,000 square leagues. The memorable shower of fire, described by Professor Olmsted, of Newhaven, in Massachussets, took place in the night of the 12th-13th November, 1833. From his observations on that occasion he was led to ascribe a periodical character to these meteoric appearances; and subsequent observations, particularly those of Sir John Herschell, at the Cape of Good Hope, and of M. Robert, at the Mauritius, have strengthened this conclusion.

The August period (that which has been matter of popular belief) seems to be still better established. The result of a course of observations made by M. Quetelet, the able astronomer of Brussels, is, that these meteors are always visible on the 10th of August; and, by a recent communication made by M. Arago to the Parisian Academy of Sciences, it appears that M. Quetelet's observations have been

confirmed by those made at Paris. It happened that, in August last, at the period when the phenomenon was expected, the director of the Observatory of Brussels was at Paris, and joined his observations to those of the Parisian astronomers, and many other persons who watched the state of the heavens, on the nights from the 9th to the 11th of that month; and the result of their united observations was, that in those critical nights the number of falling stars observed was 25, 30, 40, and even 50, in an hour; an amount greatly exceeding the average number observed in the finest nights of summer, which rarely exceeds eight or ten in the same length of time. The phenomenon was by no means confined to the horizon of Paris; for it was seen, during the same period, from Brussels and Troyes to the mountains of Vevarais, in Ardeche. This fact was communicated to the Academy of Sciences by letters from the various quarters where the phenomenon was observed. And further, at a meeting of the Academy on the 2d of the present month of September, a letter was read from Professor Amici, of Florence, in which that astronomer stated, that he had observed the falling stars on the night of the 10th-11th August, and had counted a hundred of them in an hour. He added, that on the same night of the year 1825, a phenomenon precisely similar had been observed in the horizon of Tuscany.

In the Prussian *State Gazette* of the 14th August last there is an account of the phenomenon of falling stars observed at Breslau, on the night of the 10th, when, between ten o'clock and three in the morning, above a thousand were counted, but they sometimes succeeded so rapidly that they could not be numbered. On the same night a shower of meteors was observed at Tunbridge, by Professor Powell, as stated by himself at the late meeting of the Scientific Association; and, at the same meeting, Mr. Addison gave an account of a shower of stars on the Malvern Hills, on the 15th of November, 1832—an observation corroborative of the *November* period of these meteors.

It has been further observed, that the appearance of the aurora borealis is frequently conjoined with that of the falling stars; and this fact was most strikingly exemplified in the extraordinary phenomena of the 3d of this month, already described. These observations have led to attempts to ascertain whether the aurora borealis is also periodical. It would seem, from the facts accumulated on this subject, that the aurora borealis occurs most frequently in October and November, though no conclusion, at all to be depended on, has at yet been arrived at.

The opinion that the falling stars are merely inflammable vapours, which take fire at a small distance from the surface of the earth, has been long since abandoned. The apparent magnitude of these meteors, their great distance, together with the rapidity of their motion, and its direction, were found to be quite inconsistent with that supposition. The celebrated Chladni, in his investigations, in 1794, respecting the mineral substances which had been ascertained

to fall from the heavens, arrived at the conclusion that these luminous meteors are not formed in our atmosphere, but are bodies which move in space with a rapidity equal to that of the planets, and which, when they meet the earth in its revolution round the sun, come within our atmosphere, and (combustion being produced by the air) become luminous, and throw out stones and mineral matters, which fall upon the earth. This explanation accords with the appearances in the sky, which, according to the best authenticated accounts, have accompanied the fall of meteoric stones; and it seems probable to be the true one, in so far as it goes.

But it goes only a short way, and leaves us still without an answer to the questions, What is the nature of these bodies, and whence do they come? The notion that they are projected to immense distances from terrestrial volcanoes, is long since exploded; nor has the romantic supposition of Hutton and La Place, captivating as it is to the imagination—that they are projected from volcanoes in the moon—been able to maintain its ground. It has, indeed, been shown by calculation, that a heavy body, projected by volcanic force from the summit of a lunar mountain, *may* be thrown so far as to be attracted, by gravitation, to the surface of the earth; but this is supposing that the motion of the projectile is not impeded by the resistance of any lunar atmosphere. The agency, however, not only of atmospheric air, but of water, is necessary to produce a volcanic eruption; and if we admit the generally received opinion, that the moon has hardly any atmosphere, and no water, we must conclude that volcanic eruptions cannot there take place. If, moreover, the myriads of falling stars, which are continually appearing, consisted of solid matter thrown from the moon, how could she afford such an incessant and enormous waste of her substance? We are, therefore, almost constrained to adopt the hypothesis of M. Arago and M. Olbers, the celebrated astronomer of Bremen, that the falling stars are innumerable small masses of matter which circulate, like the planets, round the sun in elliptical orbits, till they come within the earth's atmosphere, when they take fire, and are either totally consumed in the air, fall in fragments on the earth, or, emerging again from our atmosphere, are extinguished, and continue their circuit round the sun. It is further supposed, that these little masses, meeting in myriads the plane of the earth's orbit, especially at certain periods of their revolution, produce those periodical phenomena which have been observed to take place.

This, indeed, is not a *theory*, but a mere *hypothesis*, ingeniously devised to account for the observed phenomena; and, in the present state of our knowledge, it may be either true or false. It is, however, the only hypothesis yet devised which is reconcileable to the results of observation; and, on this account, it is entitled to attention. But the question still recurs—What is the origin of these mysterious bodies, and what functions do they perform in the system of the universe? Have they been originally created, for purposes incomprehensible to us, to circulate for ages in the regions of space,

till they terminate their course by coming in contact with the planetary atmospheres? Or are they the *disjecta membra* of celestial bodies similar to our own planet, which have been burst and shattered by some explosive force into myriads of fragments?

This last supposition, wild as it may seem, is supported on plausible grounds by the author of the able article, 'Astronomy,' in the *Edinburgh Encyclopædia*. The four recently-discovered planets, Juno, Pallas, Ceres, and Vesta, which revolve in orbits between those of Jupiter and Mars, have every appearance, from the anomalous smallness of their size, from the position of their orbits, and other circumstances, of being merely fragments of some large celestial body which once revolved round the sun between Jupiter and Mars. Assuming such a body to have been burst in pieces by some internal convulsion, and the principal fragments to have corresponded in number and in diversity of magnitude to the four planets in question, it is shown that their relative positions and the other conditions of their continued revolution round the sun, would correspond with remarkable precision to the circumstances in which these planets are actually found to exist. Should this hypothesis become matter of demonstration and certainty, it cannot be doubted that it would be a great step towards a theory of the wonderful meteoric phenomena which we have made the subject of the present remarks, and would lead to sublime and awful contemplations as to the manner in which

> "The cloud-capp'd towers, the gorgeous palaces,
> The solemn temples, *the great globe itself*,
> Yea, all that it inherit, shall dissolve,
> And, like the baseless fabric of a vision,
> Leave not a wreck behind."

G. H.

Aurora Borealis, 3d September, 1839, 11 hr.—From east to west a dense cloud extended to an altitude of 15 degrees, the lower part of which was of a dark blue; the sky, from the border of the cloud to about 45 degrees, was covered with a luminous vapour of white light, amidst which brilliant streamers appeared, the flashings of which were in rapid succession. The stars α, β, γ, and δ, Ursal Majoris, were completely obscured, and ε, ζ, η of the same constellation were greatly diminished in lustre by the auroral vapour. At 11 hr. 50 min. the streamers were remarkably large and vivid, one in the N. E. extending 60 degrees, from which a vapour issued, resembling that luminous gas emitted by phosphorus; the brilliancy of several of the principal stars was greatly lessened thereby. At 12 hr. the bank of cloud gradually rose, and the streamers projected from N. to E. beyond the zenith, obscuring all stars of the 3d magnitude over which it happened to pass.

During the display several meteoric stars appeared; one was observed to pass in a northerly direction, about 10 degrees each side of the zenith. It had no train, and equalled a star of the 2d magnitude.

Belle Vue Place, Stepney. J. M. Cavalier.

FOREIGN ARTISTS.

In an article on 'Art and Artists,' in the 'Quarterly Review' for June, 1838, it was well said, that "our artists live in a fool's paradise, the atmosphere of which is little calculated to stimulate their energies or correct their errors." The same "complacent feeling of superiority over other nations" still continues even now, though the progress of art in other countries has been so great and so rapid that the Germans are actually battering the gates of our principal fortress before we have thought proper to reconnoitre. In the third volume of 'Modern Art,' by Mr Razinski, a Polish gentleman, who visited England about two years ago, the writer says:—"After having examined English modern painting, and endeavoured to trace its aim and distinctive character, I cannot refrain from entertaining a wish that artists from Munich may be employed to execute frescos in some public building in London, either in the new Houses of Parliament, or in the great room called Westminster Hall." The wish was father to more than the thought, for proposals have actually been made on the subject, and persons of high authority have been applied to to entrust the historical decoration of our most national edifice to German artists, as more capable than ourselves of feeling and representing the feats of England's wisdom and of British glory.

The insult involved in this attempt—not at competition, but at a monopoly of employment among us—may not produce the effect which such contempt from foreigners might be supposed likely to create; but surely the danger will not long remain unheeded, as our nobility have always been ready enough to prefer foreign productions to native talent. Last century a very large proportion of artists in this country were Germans, French, and Italians, and none were more readily employed than Rysbrack, Roubillac, Loutherbourg, Kettel, Cipriani, &c.; and in our own time a German was made historical painter to the Prince Regent, and foreigners have been employed to paint chapels, town-halls, &c. Even in the very branches of art which we claim as our own—portrait and water-colour—there are two or three foreigners actually making fortunes among us, whilst many English artists complain of the want of patronage. Large pictures are also occasionally brought over by our migratory nobility, the works of foreign artists.

The good that English artists are to derive from the employment of foreign artists is at least problematical. Their works in our chapels and town-halls are not only seen by themselves without an opportunity of comparison with our own efforts, but some of them are so positively bad as to be quite unfit to excite emulation; on the other hand, some that contain merits of a high order have been placed to disadvantage in our annual exhibitions, much to our discredit. Those by Paul Delaroche, at the British Gallery, were, on the contrary, very advantageously seen, but not in comparison with English productions. In all these instances they are calculated to

mislead us, rather than to excite our emulation. The only case that we can recollect of a fair field and no favour was at Mr Hobday's gallery some ten or twelve years ago, in Pallmall, where Horace Vernet's battle-field at Hastings, and Scheffer's 'France in 1814,' produced an unexpected effect on the few artists who purchased a good lesson of emulation at a shilling a-head. Why is not a mixed exhibition of the kind encouraged, and not that self-sufficient conceit which prompts English, French, and German artists to brag and circumvent each other, rather than fairly compete. If it can be proved beyond a doubt that we are incapable of illustrating British history, and that others teem with adequate genius, let not our public edifices remain unadorned and our people uninstructed, through tenderness for our inefficiency; but, on the other hand, let us not be sacrificed to partial prejudice, to the whims of individuals, to a fashion or a trick. Let Government encourage an extensive competition; let it also, instead of adding each year three or four insignificant pictures to our National Gallery, at once bring the Cartoons within reach of our artists. Why do not the trustees exert their influence? Why do not our artists bestir themselves for the purpose, ere it be too late, to resist more powerful, because more energetic rivals? This is the only country where such productions would be kept twelve miles from the metropolis, too far for the artists to study them.

NOTE ON ELECTRO MAGNETISM.

By E. Lenz.

(*From Poggendorff's Annelen der Physik.*)

In the treatise which Professor Jacobi and myself have written in common on the electro magnet, we have shown how each of the laws of the magnetic action of spirals upon soft iron produces another limited but closely corresponding law, according to which, from the want of an iron centre, the stream is spirally evolved. Of these latter laws I have treated elsewhere (*Mem. de l'Acad. des Sciences, T.* 2, 1833), but there are certain restrictions which I will now more closely canvass.

I have in my treatise examined the law:—"In spirals of variously graduated circumferences, the electromotive power of the streams induced from the same iron centre, and the same magnetism therein generated, is independent of the circumference of the spiral windings."

On the other hand, in our common treatise, we have proved that this law is true in the main, that the magnetism generated in an iron centre by a magnetising spiral may be independent of the circumference of the spirals, but that this law suffers a limitation from those nearest the end of the iron centre; in which case the wider spiral may lose in comparison with the narrower. We have also there shown how this departure from the general rule may be accounted for.

The question now arises, since these laws in both cases correspond so

closely, would this restriction of the general law extend also to the magneto-electric stream? I believe that a doubt of this cannot exist, as the conclusion by which we explained the diminution of the magnetising action on the increase of the spiral circumference, will apply, *passim*, also to the magneto-electric case.

Indeed, if we look at the figure referred to (Fig. 5, Taf. 2), in which M N represent the iron centre, a and a' the transverse windings of two spirals upon one and the same level $a'\ a\ o$, but projecting at unequal distances from the iron,—if, I say, we look at this, and suppose the magno-electric case that in M N, a magnetism appointed for all experiments, be suddenly withdrawn, a stream will thereby be generated in the windings a and a'; and this will not only be promoted by the magnetic elements of the iron in the plain (*ebene*) of both streams, but by others weaker the further they are removed from o, in consequence of the greater obliquity of the windings. We assume that upon a, on the abstraction of the magnetism, the angle $m\ a\ n$ describes a sensibly co-operating section, so also upon a' does the angle $m'\ a'\ n'$ describe parts similarly influenced. Upon a and a' will the action be the same, as well in the electro-magnetic as in the magneto-electric instance; and with respect to b and b', which are at the extremity of the iron, the effect will be equalized. But if the windings do not extend entirely to the end, but only approach it, as in d and d', a portion of the section in d' will fail to co-operate, while in d none of the effect will be lost, and the influence on the wider spiral d' will also be necessarily weaker than upon d, even when the action is perfectly equal upon a and a'. The law of the electromotive power of magneto-electrive streams applies particularly to iron rods of unlimited lengths.

But in such case the question arises, how did it happen that in my earlier researches I did not discover this departure, small though it be, from the general law which renders the electromotive power of magneto-electric streams independent of the width of the spiral windings? A closer consideration of the process will explain this.

In my former treatise I adduced two experiments in demonstration of the assumed law. In the first essay the proportions of the diameters of the windings were $= 0''$, $73 : 6''$, 57; on the second, $0''\ 73 : 28''$, 0. I will confine myself to the last, in which the proportion of diameters was as $1 : 40$; what is admitted of this, is allowable in a yet greater degree of the other, in which the proportion was only $= 1 : 9$. The induction of the streams in those spirals was so managed, that the spiral of $28''$ diameter, consisting of six windings, which had been wound closely together round a wheel of this diameter, and drawn on to an iron cylinder of about half an inch in diameter and two inches long, at the end of which two powerful magnetic systems were placed, so that the iron cylinder became highly magnetised, and on the sudden removal of these two systems, the stream was generated in the spiral. Thus the two systems, each of which being $19\frac{1}{2}$ inches long, placed in opposition with the cylinder, formed a magnet 41 inches in length, round which the spiral wound, its distance from the same being only 14 inches; the angle therefore described by $m\ a\ n$ was of 112°. On the sudden withdrawal of the two systems, the magnetism of this entire angle is preserved; and not only

the 2-inch iron cylinder, but also the two 19½-inch magnets act upon the spirals. We therefore find why the imperfect co-operation of the end of wider spirals did not show, if we admit that active magnetic elements existed within the angle of 112°, which is certainly most probable.

After these explanations I must hence modify (as being assumed *too general* in the treatise alluded to) the law presuming the electromotive power of the magneto-electric streams independent of the diameter of the spiral windings. It becomes therefore necessary to qualify by saying, *that it is only effective generally when the inducing magnetic rods are to be considered with respect to the width of the spiral windings as interminable, but that upon short magnetic rods the limitation exists; that the comparison of the effects of spirals of different degrees of diameter is in favour of the less.*

Precisely the same remarks, which I have just made upon the width of the windings of magneto-electric spirals, are applicable to the other law presumed by me in the treatise already quoted; that the electromotive power in the magneto-electric spirals is proportionable to the number of the windings. Also here, in the case of the shorter inducing magnets, must the end windings evolve a somewhat smaller electromotive power. The reason why this was not shown in my former experiments was partly attributable to spiral closely surrounding the iron cylinder, and partly to the circumstance of the windings being effected not only by the abstraction of the magnetism of the iron cylinder, but also by the removal of magnets of horse-shoe iron, whereby the inducing magnet is, as it were, lengthened. It is not necessary to enter further into detail in this case, as it is entirely analogous with that just considered, only a horse-shoe iron magnet is employed instead of the two rectilinear systems.

Thus even here is it requisite to modify the law, which assumes that the electromotive power is proportionable to the number of the windings, as, strictly speaking, it is only cognizable when such magnets are employed as, in proportion to the width of the windings, may be considered interminable. It would be better expressed thus: The electromotive power of a charged spiral is equal to the sum of the electromotive powers of single windings collectively.

COLOURS FOR PAINTING.

The attention of scientific men has been called, by a writer in 'Blackwood's Magazine,' to a subject of the greatest importance to all connected with the art of painting. The writer asserts that he has used colours ground in a medium, the composition of which is unknown to him, and the effect obtained has been such as to lead him to believe that, if not the material employed by the great colourists of the old schools, it is at least one which, in the hands of a skilful artist, will produce effects rivalling theirs in beauty and durability. That the discovery of the cause of the unfading brilliancy

which characterizes many of the paintings by the old masters would be a great acquisition to modern art, few will deny. The certainty of preserving the works of a Wilkie, a Haydon, an Eastlake, a Turner, or a Calcott from decay, would indeed be a glorious achievement, and even partial success would not fail to exert a beneficial influence on the art. The painter who employs the materials now in use performs his task with the conviction that in a few years his colours will have lost much of their brilliancy, and that from the moment they are placed on the canvass, a chemical action is going on which will in the end complete their destruction. This being the state of the case, it may be unnecessary to remark that he wants the greatest stimulus which can be given to the mind of a man of genius, the reflection that the work before him is imperishable, and that future ages will sit in judgment on the merit of the performance.

The writings of the immortal Milton were neglected by his contemporaries; but this was insufficient to abate his ardour. The scorn and derision of the critics of the day were rendered harmless by the certainty that the printing-press would prevent the possibility of his works being entirely lost to the world, and the cheering thought that a time might arrive when the judgment passed on them should be reversed. The case of Milton is that of thousands whose genius has shed an unfading lustre over the country of their birth; and many a one whose works will be read and admired when the deeds of Marlborough and of Wellington are forgotten, has been supported in the hour of trial and suffering by the hope that the pitiless world, which then denied him the means of subsistence, would, when he no longer needed its sympathy, repent its harshness and injustice, and shed over his untimely bier a tear of pity and regret. The painter can receive little consolation from such a thought! His most elaborate performances enjoy but a short season of perfection; the finger of time effaces the traces of his genius, and there even exists the possibility of his outliving the work which cost him so much labour and study in executing. True it is that copies may be made by the engraver, and multiplied *ad infinitum*, but Rembrandt has shown how much the beauty of a design is lessened when deprived of colour, though etched by his own masterly hand.

The discovery of a medium for painting, which will render the colours permanent, has often been attempted of late years, but with little success. The publication of the Review of Merimèe in Blackwood has induced many persons, who had before paid little attention to the subject, to carry on experiments with a zeal equal to that evinced by the alchymists of old. Chemical tests and re-agents, crucibles, retorts, and blow-pipes have been collected and employed by individuals who could before see little utility in such pursuits; and borax, the substance spoken of by the Reviewer as the principal ingredient in his composition, has been reduced to every possible state. To some of these investigators it may perhaps be interesting to know that the result of a series of experiments, made by the writer of the present article, has been the discovery of a medium

which will mix readily with the colours, flow freely in the pencil, dry firmly in a few hours, and preserve its character after being exposed to the most intense heat, or subjected to the action of the strongest acid. It is of itself perfectly transparent and inodorous, and in using it the painter has no need of varnish, oil, or any other liquid which can possibly affect the beauty of the tints, or endanger the durability of the work. Some further improvements have been suggested in the mode of its preparation; when these are completed the writer will have much pleasure in submitting a detailed account of his process to the readers of the Polytechnic Journal.

Σ.

ANCIENT ARCHITECTURE.

The first foundations of history may be looked upon in the light of tales told by parents to their children, and transmitted afterwards from one generation to another; they are only probable in their origin, and lose a degree of probability every succeeding generation. We know what strange and ridiculous absurdities are to be met with in the ancient history of nations, even among the Greeks; and the Romans, though a grave and serious people, have wrapt the history of their early ages in fable. It is, however, to history that we must look for matter to form a paper on the subject of the title of this article, and the first to which we shall have recourse will be the Bible.

We think there can be no doubt that ARCHITECTURE, when in its infantine state, must have been not only rude or plain, but what may be termed irregular. The mind can easily fancy that in those days man must have studied the useful prior to the ornamental; or, in other words, the *uses* of the several parts of the fabric met with more attention than the beauties. When societies began to increase in wealth, importance, and number, by traffic and commerce, then followed improvement in their ideas of the art of construction; attempts were then made at some sort of regularity and proportion in the disposition and formation of the several parts of their structures: for some idea of proportion may be supposed to have been known long before the orders were instituted.

We may be very naturally led to suppose that, when arts and learning became famous throughout the land of Egypt, architecture must have flourished among the people of that country; for we find very elaborate works mentioned even among the great designers contemporary with Noah. The walls of Babylon are reported to have been built by Semiramis, in a truly wonderful and magnificent manner, in the year of the world Two thousand and thirty-eight, and were classed among the "Seven wonders of the world." Another remarkable instance of the early knowledge of building recorded in Holy Writ is the erection of the Tower of Babel on the plain of

Shinar. These two famous buildings, the one of brick and the other of stone, erected soon after the Flood by the sons of Noah, are said to have had recorded on them the most remarkable passages in the history of the world, from the time of the Creation down to the Deluge. For further testimonies of an early progress in architectural as well as mathematical knowledge, the reader will do well to turn to the sixth chapter of the first book of Kings, where he will find an account of the building of Solomon's Temple, which took thirteen years to complete; and in the seventh chapter of the same book, the account of the building of the house in the forest of Lebanon, for Pharaoh's daughter. For this work Solomon is recorded to have sent to Tyre, and fetched from thence a widow's son named Hiram, of the tribe of Napthali.

The cultivation and improvement of architecture has been, by many learned writers on the subject, ascribed generally to the Egyptians, on account of their celebrated Labyrinth, which is said to have been magnificently adorned with columns of porphyry. The Grecians raised an everlasting monument to their genius, in the Labyrinth of Crete, built by Dedalus. It is recorded that Cadmus, the grandson of Agenor, King of Tyre (about five hundred and sixty-two years after the completion of that stupendous work, the Walls of Babylon), brought the art into Greece from the Phœnicians, and built the city of Thebes, called so from the famous Thebes in Egypt. About three hundred years after the foundation of Rome, Phidias, an Athenian, erected a temple of the Doric order, the height of which was said to be fifty-eight feet to the roof. Supposing the base, shaft, and capital of the Doric order to be eight diameters in height, and the entablature two diameters, the diameter of the columns of this temple would be six feet nine inches and a half; this will in some degree point out the state of perfection at which architecture had arrived at that time.

Greece was furnished with many noble monuments of building, which were brought to Rome by Marcellus, such as the Temple of Jupiter Olympus. The Temple of Cizcius, which, according to Pliny, was so rich and elaborately wrought, that in all the joints of the stone threads of gold were inlaid to separate them. The Temples of Minerva, of Diana, of Pallas, of Apollo, of Trallius, &c., at Athens, also testify the nobleness, use, and beauty of architecture before it was brought to Rome. The above quoted author also relates that Cecrops, the first King of Athens, two hundred years previous to the destruction of the City of Troy, founded a school for the instruction and encouragement of architects. If we reflect on the beautiful grandeur and inexpressible magnificence of these immortal works of ancient Greece, and the advantage we enjoy in having the art so carefully preserved, now that all her stately cities and temples are destroyed,—

"*Templa quam dilecta*"—

and even some of their names buried in the ruins, we cannot too highly esteem the noble beauties of her architecture, in spite of the

devouring hand of time. Of Greece it may with truth be said, that she most happily perfected the arts; while Rome, raised by ambition, Prometheus-like, stole architecture from her, and laid desolate its glory. The Roman Emperors caused the noble and stately temples of Greece to be pulled down, had them transported to Rome, and there confined the art and materials to immortalize their own nation and posterity. Rome, possessed of a prize so glorious, and of such inestimable value, and being at the same time mistress of so many populous kingdoms, brought together the greatest artists of the times, and by an unwearied pursuit followed the paths of the more worthy Grecians, both in learning and government. Athens may be truly said to have furnished the Romans with most exemplary rules; and being naturally of an aspiring disposition, they endeavoured to show the excellent perfection of architecture in the various noble structures and temples which they erected to the honour of their Emperors, and to the glorious conquests which they achieved; the remains of many of which continue down to the present period in the great works of those who flourished in the fourteenth and fifteenth centuries.

It is recorded of Marcellus, who was celebrated by his triumphs, his taste, and his knowledge of the fine arts, that he brought from Greece one of the most beautiful and regular pieces of architecture, which was placed in a theatre called after his name.

In Tacitus we find that that unfortunate hero, Pompey the Great, is recorded as having built the first Amphitheatre at Rome, the Baths of Diocelsian, the Theatres, the Rotunda, the Palace of Nero, and upwards of fifty temples dedicated to their deities.

The triumphal arches of Rome give us a vast idea of the perfection to which architecture had been brought during the flourishing times of her Consuls and Emperors; it is written that they were so passionately fond of building, that they left no means untried to outvie each other in the pomp, splendour, and magnificence of the public edifices, which they erected either for the use or the ornament of their city. Happy were those distant ages, which have long since rolled away, to have had so just a taste of the excellence and perfection of architecture; and happy would it have been for the honour and credit of the people of this land, if (in the nineteenth century), some of *our* professors of this noble art had exhibited as perfect and beautiful a taste. Our city would not then have been disfigured by *national structures* which display neither taste, beauty, nor magnificence. We particularly allude to the mass of rubbish miscalled '*The National Gallery*,' which stands, in all its meanness, on the spot once occupied by the "Royal Mews;" and which, if appropriated to its proper use, might well be turned into a "Royal Rabbit Hutch:" for a National Gallery, we should say, read '*A National Disgrace*.' But to return to earlier ages;—the richness and splendour of the numerous structures erected during times of peace employed the busy and fertile minds of men in honourable rivalry, and in no small degree contributed to the preservation of

order and regularity in their government, as well as in architecture; for we find that, when this noble art fell into disuse, insurrections and domestic wars changed the form of their government, and Imperial Rome unhappily fell a victim with it, after it had been in a flourishing state there for upwards of seven hundred years. Extremes in all things must bring on a change; 'twas so with architecture, which was long the pride and glory of the Romans; but fate decreed that it should remain buried in oblivion nearly eight hundred years—successive ages of ruin and desolation! Where many a proud and noble Roman city, abounding in magnificent and splendid structures, once reared its head, now nothing but a wild and desolate scene presents itself:

"*La fortune passe par tout.*"

The Goths, under their King Alaric, took the city of Rome about the year four hundred and twelve; and after that it was taken by Odoccex. In the year four hundred and fifty-six Genbricus, King of the Vandals, brought about thirty thousand men out of Africa, and laid it waste and almost desolate; in short, ignorance and brutality had so strongly infected that age that many countries conspired to ruin and destroy all the stately structures which the Romans had raised for the encouragement of art. Among the number none were more eager for the destruction of Rome than the Franks of Gaul, the Visigoths in Spain, and the Vandals in Africa.

Though architecture was buried in ruins for the period of eight hundred years, during which time scarcely anything was erected but in the rude Gothic style, yet in the fourteenth century we find that it once more flourished, and, Phœnix-like, recovered new life from its ashes. This was in a great measure brought about by the founding of an academy in the City of Florence in the year fourteen hundred, in which there were, not only a great number of noble students, but men of genius, who professed a desire for inspecting into the *ruins* of *the Art*, and once more restored it to perfection.

William Collier.

THE EASTERN EXHIBITION OF WORKS OF ART.

Handsome rooms have been opened, and are now open, in the Commercial road, for the display and sale of the works of modern artists. Of their contents we hope to have better things to say when the rooms shall re-open with a new assemblage—against which time we hope something will be done towards improving the light—at present they rather display the laudable anxiety of the men of commerce to promote a patriotic purpose, than that the desired purpose is accomplished. Though even now not unworthy of public attention, it may not be denied that the exhibition too much abounds with the works of immature artists, or pretenders to art, whose *pretensions* are as yet but of doubtful value, and may, some of them, at

least, turn out untenable. Having arrived at the threshold, and some of them just stepped over it, they seem to fancy they have arrived at the *ends* of art, and are obtruding *beginnings* on the public attention, such as, a few years hence, they will themselves put out of sight, and will perhaps wish had never been seen. We here speak of such among these juveniles as may continue painters; for some will, doubtless—listening to the advice of Dr South—have sought and found other professions, more salutary both for society and themselves. Many a man might make very good canvas, who makes but a bad figure thereon.

We by no means intend to imply that the exhibition entirely consists of such immature or juvenile productions; but only that there are too many such, and some of them placed in very conspicuous situations too. Nevertheless, we shall write our best of them, and shall freely

> "Blame where we *must*, be candid where we can,
> And vindicate the ways of *Art*, to man."

And, first, we shall treat of the occupants of the central stations of the Great room, which, unfortunately for the authors of the pictures that hang on three of them, afford but too pertinent illustrations of what has been just asserted. We must premise that the reader is aware of the impossibility of our treating of the whole 552 works exhibited, without converting our journal into a mere catalogue; and that he is satisfied that, in not wasting his attention, we consult his interest rather than our own.

The Seven Bishops blessing the People previous to their Commitment to the Tower, for refusing to read the unconstitutional Decrees of James II on the Protestant Churches. By Eugenio Latilla. No. 94.—A very large work—which is followed by a quotation from Hume's history, too long for insertion, affording an instance of how a political purpose may be answered, or at least insidiously aimed at, by seeming to oppose it. The Bishops were themselves disobeying the King, yet "they exhorted the people to honour the King, and maintain their loyalty," meaning by "loyalty" obedience to the royal will. And this, says the historian, was accompanied "by the most lowly and submissive deportment." What can be inferred here but that, as the Bishops did not *re*-cant, they were only canting? And these exhortations, according to Hume, were "expressions more animating than the most inflammatory speeches." For "animating," should we not read *irritating?* So much for the moral of this work from the *brush* of Mr Latilla.

Concerning its execution, the whole picture is made up of the bravura of art. The colourman is relied upon; the essentials of painting are disregarded. Yet there are some passages that, were they *painted*, might be looked at without disapprobation.

Immediately above this hangs another large, but not great work, entitled *Eurydice's Second Descent into the Realms of Pluto.* By

G. J. L. Noble. Illustrated in the Catalogue by the following verses from Congreve's Ovid:—

> "They well nigh now had passed the bounds of night,
> And just approach'd the margin of the light:
> * * * *
> One last 'Farewell' she spoke, which scarce he heard,
> So soon she dropp'd, so sudden disappear'd."

This picture powerfully reminds us of a fine composition by the elder Smirke, of which there is a book plate by Raimbach, where Death and Sleep are transporting, or translating, the corse of Sarpedon from the plains of Troy. But we must do our artist the justice to say, that only the hint is borrowed thence; and, for some reason or other, Mr Noble's picture looks better here than in the Suffolk street Gallery. It seems to have more vigour; and we think has been subsequently painted upon. Upon the whole, we may admit that it is redeemed from the category of mediocrity; and we will now say why:—

The freshness of colour is not quite compatible with Ovid's poetry, for if Eurydice had but "just approached the margin of the light," and had dropped thence, how came her figure so completely illuminated? It could not have been so. It is not, therefore, on that account. It is because the picture has something of the air of *fresco* painting, which on canvass is rarely attained; and because grandeur of conception and of composition are aimed at, and in some degree attained. Intelligibility, however, is wanting. Great licence—too great licence—is used in the construction of the three-legged chair, or rather chair of three *legs*, in which the two inhabitants of Hades have placed their precious charge; and it is difficult to connect the right hand of the darkest of these with the rest of his figure. The legs of the female are too slender, or are made to seem so by the comparison, which the spectator fails not to institute, between these and the gigantic limbs of the demons—the myrmidons of Pluto. The peep upward and the bit of cerulean blue are of great value, although we looked in vain to find Orpheus there. Altogether, there is enough of painting and of the spirit of Ovid's poetry about this performance to make the poor Bishops beneath appear even more prosy and smeary than they did at Suffolk street. We were in great hopes to have obtained some favourable insight as to this artist's powers of detail (which cannot well be discerned at the height where his Eurydice is placed), by stepping to the opposite side of the room and inspecting his *Camilla exchanging the Ring with Gil Blas;* such an inspection, we mean, as might assist our estimate of this artist's pictorial talent. Alas! we were sadly disappointed. Camilla is but a common-place hussey; and Gil Blas a fat-headed fool; which was by no means necessary in order to his appearing a credulous dupe, as M'Clise has shown us. As to his hands—ye gods! All who look at the poor Gil's left hand must agree that Mr Noble has made but a bad hand of it; and the right hand is scarcely better.

Opposite the entrance is *Christmas in the Reign of Elizabeth*. By R. W. Buss.

Sir Walter Scott writes—

> " England was merry England, when
> Old CHRISTMAS brought his sports again :
> 'Twas Christmas broach'd the mightiest ale ;
> 'Twas Christmas told the merriest tale ;
> A Christmas gambol oft could cheer
> The poor man's hearth through half the year."

The artist has here brought together a great variety of mirthful circumstances ; but they might and should have been better painted, and more maturely digested. The lights and shadows—ay, and the colours too — are too capriciously and unaccountably distributed ; and the aggregation, when compared with the same subject as treated by Mr Nash (mentioned in our review of his Haddon Hall), wants the hilarious and spontaneous air of genuineness, and looks too much like a theatrical exhibition of *affected* mirth. That Mr Buss has studied, and is doubtless well informed on the subject of our national Christmas gambols, is evident from the illustrative aid he has given to an excellent article in the *Penny Magazine** of last Christmas : we are therefore somewhat surprised, as well as disappointed, at his omission of such droll, as well as picturesque, mummery as the savage man ; the morris-dancers, with their black hoods, and caps and bells ; the dragon pursuing the Princess Saba, and the knight on his hobby, who might have been posting to her rescue. It is possible, however, that we may have overlooked some of these in Mr Buss's crowd of mummers. Yet, whether or not deficient in these, and however imperfect in picturesque arrangement, the artist has introduced one group, to which we ourselves, as well as, we believe, Mr Nash, were strangers, and of which he writes—

" At the extreme right is a party enjoying a game at snap-dragon, and behind is *The Kynge of the Beane*, a pastime now confined to Twelfth-day [night] : the possessor of the piece of cake with the bean in it, being crowned by the domestic *Fool*, who, knocking the crown over his eyes, fleers in his face, and is about to steal his cake." This is good fun in itself ; but is not made enough of in the picture ; his gaby majesty is left without other subjects, and is king only of the *bean*, which he is about to swallow.

We have not, like the *Probe*, set up any medical auxiliary pretensions, or we might here have taken the friendly freedom of prescribing for Mr Buss a little hellebore, to purge him from his *addiction* to vulgarity. His No. 49—*Master out ! or the disappointed Dinner-hunters*, and his *Scene at the Boar's Head Tavern in Eastcheap*, from Shakspeare's King Henry IV, where Falstaff appears among his intimates, are by far too much of this description, we mean in mode of treatment ; but of " Master out !" the same may be said of the choice of subject.

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* In Sir Walter Scott's *Abbot* there is a good account of these annual frolics, but perhaps the best with regard to details is in the *Penny Magazine* of Dec. 22, 1838.

His *Little* Falstaff (which may remind our readers of Quin's bon-mot about Jacky Falstaff), is much to be preferred to these, and shows that Mr Buss can paint more carefully and with more feeling when a *home*-felt subject is before him. We were informed at the Gallery that while he was engaged in painting his Shakspearean Falstaff, which is so immeasurably behind the poet's conception, and even behind the stage representation of this remarkable scene,—he heard a noise in his studio, and, going up stairs, found his little son Alfred had attired himself in the costume of the fat knight (though we do not very well understand how this could have been), and was cutting away right and left at the men in buckram; and that the painter then (like the Academician Uwins, with his charming little girl in the brigand's hat) mounted a canvas on his easel, and produced what is exhibited in No. 158.

Another of these large central pieces is by W. and H. Barraud, and is entitled *The Pursuit*. Three well-mounted equestrians, at different distances, and attired in military costume, are following a blood-hound, which instinctively tracks some fugitive victim

> "———— O'er the watery ford;
> O'er sandy plains, and stony barren hills;
> O'er beaten tracks by men and beasts distain'd,
> Unerring he pursues."

A watery ford or mountain torrent rushes across the near-ground, separating a cottage with its inhabitants from the track of the pursuers; the back-ground consists of stony and barren hills, suggesting, with the costumes, that the scene is in Scotland. One of the riders, hoping for more accurate information, calls to certain peasants who stand at their cottage door, excepting the parent, and he sits on the stone steps.

Thus a story is intelligibly told. The figures, landscape, and animals are painted with some ability, particularly the blood-hound and a young female cottager of interesting aspect. The colouring is somewhat ungenial, but this ungeniality accords with the nature of this subject. The chiaro-scuro is commendable; and the merits of the work grow on the spectator as he gazes, which is certainly one criterion of successful accomplishment.

No. 165 is an excellent picture, contributed by Mr M'Manus, who has also two others, Nos. 218 and 285. The first illustrates a passage in the Irish ballad—

> "She sat at the door one cold afternoon,
> To hear the wind whistle and gaze at the moon."

The air of listlessness which the artist has communicated to the girl is very true to nature, expressing, as it does, the state of feeling dependent upon the want of a fixed object for contemplation; thinking, perhaps, of a lover, but of no one individual particularly. The second—*A Candle-light Study*—is one of the best specimens of art from the sister kingdom we have yet seen. The connoisseur will discover in this little picture a rare combination of truth and beauty, a praise which is also due to the third and last—*Irish Midnight*

Mass—a subject which will always be valuable as an illustration of customs and manners that have endured for ages past, but which the sweeping hand of improvement is fast hurrying into the gulf of oblivion. We were told by the attendant in the exhibition-room that *Cathleen* was sold a few days after it was exhibited, a fact which does credit to the taste and judgment of the purchaser.

The fourth of the central pictures (over the entrance of the room) is of two lovely mountain lasses of *The Albruzzi*, who having put down their basket of fruit, have stopped to have a little rest and pastoral chat. An interesting work of a fine mellow tone. The youngest of the girls in especial is a fine, healthy, unsophisticated child, abounding in native gracefulness and simplicity. This masterly performance is from the pencil of Mr F. Y. Hurlstone, who, in this instance, seems to have incorporated with his style much of the warm grey shadows in which Murillo was wont to indulge, and in which he was so original and successful; not that Mr Hurlstone is therefore to be esteemed a copyist, or has by this adoption impaired his own claim to originality. There is, moreover, this difference between the two painters in their subjects, that the knavish-looking young peasants of Spain seem as they were "born in sin;" whereas those of Italy, especially the youngest, seem born in innocence, and as if before the Fall. The draperies are richly coloured, and in excellent keeping with the carnations; the background, too, is well suited to the rest of the work.

But though these pictures are among the largest in the collection, and are thus centrally placed, the reader may not suppose that there are not others in this oriental exhibition better worthy of his notice, save and excepting this last. Our object has been, not merely, or not so much, the manifestation of those minor truths concerning their respective merits as lay within the path of our critical duty, as the certifying of those major truths with which we set out, substantially and plainly, that it had been better for the public had these important spaces been filled by productions from the pencils of Wilkie, Hilton, Etty, and others who might be named.

No. 24 is a fine portrait of a fine matronly woman, by R. Rothwell, R.H.A. No 203 is another, perhaps more sedately charming, by R. Dodd.

No. 15 is a grand landscape of the ruins of ancient Tyre, by W. Linton, on a large canvass, which would have filled a central space with honour to all parties. It possesses Wilsonesque tones of colour; a fine chiaro-scuro; and the artist has been so far sedulous of antiquarian considerations as to keep to rectangular forms in the construction of his towers, which is nearly all that we know of the architecture of ancient Tyre.

Mr J. Hanks exhibits two pictures, both of them fraught with peculiarities, and far out of the common track. No. 109 is entitled *The New Acquaintance*. The subject is taken from Goldsmith's 'Vicar of Wakefield,' and the new acquaintance is Squire Thornhill, who is approaching Olivia and the pastoral group. But Dr Primrose and all his family are so disguised—so completely *Germanised*,

that we really did not know them again; neither is there the least trace of the honeysuckle bower in which they were regaling at the time.

Mr Hanks's other and much smaller picture is designated *The Salutation*, and represents a gentleman of the old school of Germany; or, say of the early times of George and Charlotte—uncovering, as he encounters two ladies in a park or pleasure ground, and with so perfectly the taught air of a dancing-master does he offer his devoirs, and the ladies receive the salutation so stiffly, that the picture seems a refined satire upon ceremonious manners—all the more ironical for being so very serious; both parties would be so *excessively* graceful, that they are in truth exceedingly affected:—at least, thus we should have understood the author's intention, if we had not previously looked at his 'Vicar of Wakefield.'

We think here is, in fact, both a burlesque upon Goldsmith and a satire upon ceremony, though it is possible that neither may have been intended by the artist, who in his mode of art is very peculiar, and though devoted to taught etiquette and conventionality, is, in his execution, quite original, though he bears *resemblance* to two distinguished masters; for in the characters depicted, in the style of casting the draperies, and in the arrangement of the colours, there is a good deal of Watteau, while in the pencilling of other passages —the scarlet-coated gentleman for example—there is much of the handling of our own Stothard.

Altogether, and notwithstanding his misconception of Goldsmith, we are persuaded that Mr Hanks (with whose name and works we were till now quite unacquainted) is an artist of no inconsiderable capability. His peculiarities, we think, would suit well with subjects taken from the high life of about a century back. We should like to see him treat some scene between Frederick the Great, Voltaire, and De Paun the antiquary; or some of the stories that are related in the autobiography of the Margravine of Bareith.

No. 222, by F. H. Henshaw, is designated *Italian Composition*. Its main feature, the cataract, is that near the villa of Mæcenas, or is, at least, something like it; and on the crest of the rock beyond, Mr Henshaw has perched, with no great propriety, an English ruin. The landscape has effect; but it is obtained by too obvious forcing. All the near parts are too dark.

No. 235. *View from Blackfriars Bridge*, by Pether, is a picture of considerable merit. The sky is well suited to the scene; the cathedral and metropolis of a fine air tint, and faithful in their forms, and the perspective correct, though of no easy accomplishment. We are at some loss to conceive how the artist has been able to raise his horizon, and consequently his station, so considerably above the level of the bridge. Perhaps he made his sketch from the roof of the plate-glass manufactory? However this may have been, his landscape has this acquired additional grandeur. But the Thames, and the shadows on the bridge, are perhaps a trifle darker than they needed to have been. His foreground seems too nearly *black* friars bridge. Recollecting *Abram* Pether, who in his sunsets sometimes

approached Claude, and in his moonlights, Wright of Derby; we are glad to perceive that the race of Pethers is not extinct.

No. 237 is *The Blind Boy*, and is from the pencil of Mrs Soyer. We have repeatedly seen this ruddy-looking blind boy silently begging, or offering laces or garters for sale, near Mornington place in the Hampstead road, and the present portrait is very like him. The younger boy offering his roll is an affecting incident, creditable to human nature, and well thought of by the artist; but it had been better for the picture, as a picture, had this charitable boy been less conspicuous. His white shirt-sleeve especially should have been kept down, and more light carried to the poor blind boy.

No. 254 is denominated *The Western Entrance of Greenwich Hospital*, by J. Stock. The terrestial and celestrial globes are, no doubt, in themselves objects of paramount importance; but here they are made so exclusively the subject of Mr Stock's picture, that the fine architecture of Greenwich Hospital is absolutely eclipsed by them.

No. 280, *The Refractory Model*, by W. Kidd, is a donkey which has been introduced within the studio of the artist, and has dismembered a Venus, and kicked down and broken some other plaster figures, to the great discomposure of the poor painter. The donkey is not well drawn, and the effect is too liney.

No. 284 is a *Portrait of the Duke of Wellington*, by H. Broughton. Did the Duke sit for this? It is as much like him, from the eye downward, as if he had, and he has shown himself very obliging in this respect. Yet we fear people will be apt to inquire what has become of his Grace's forehead. The manner of wearing his hat does not sufficiently account for its absence.

No. 289, *The Death of Nelson*, by S. Drummond, A.R.A. Of this picture the colours have sunk in since it was painted; it wants cleaning, and it wants varnishing. But somebody should do themselves the honour of purchasing it, for it tells the story of the death of our great admiral better than any other picture that has been painted of this national subject. The principal group is quoted with considerable address from Rubens's "Descent from the Cross." It is so well adapted to this marine occasion, and was thought so highly of by the Royal Academicians at the time when it was first exhibited at Somerset House, that they made Mr Drummond an associate in consequence of his having produced it.

Mr J. Tennant's *Landscape in the Spring Season* (No. 299), is a picturesque scene, abounding in nature's vernal freshness, wherein the bright greens are contrasted by the red tiling of rural buildings, and a party of three juvenile anglers adorn the foreground with excellent effect. A foot bridge, and water docks at the left-hand corner, are judiciously introduced; and the clear sky is reflected in the calm water. But the reflection from the principal group of lofty trees, which are painted with considerable ability, is surely too light for the circumstances under which we view the present landscape.

HISTORY AND PRACTICE OF PHOTOGENIC DRAWING, By L. J. M. DAGUERRE.

THIS is a translation (published by Smith, Elder, and Co.,) of the work lately printed in Paris by order of the French government, for the purpose of making public the true principles of the Daguerréotype, with the new method of Dioramic Painting invented by the author. The translation has been (according to the title-page) executed by Mr J. S. Memes, L.L.D. Hon. Member of the Royal Scottish Academy of Fine Arts, &c. The work contains information which will be deeply interesting to those who love to trace the astonishing results of scientific inquiry from their spring; but we apprehend the reports to the two chambers upon the government proposition for an annual pension to the discoverers of the Photographic art; that to the Deputies by M. Arago, and the one to the Peers by Baron Gay Lussac, will constitute the generally attractive part of the book. It is impossible to contemplate the proceedings of the King of the French, in conjunction with those of his ministers and the chambers, in relation to the matter of the Daguerréotype, without feeling that in the race of genius, Englishmen are centuries behind their enthusiastic and less selfish neighbours. When will the government of Great Britain think it a part of duty to buy a grand discovery, and give it to the world? And if the government were so inclined, when will the House of Commons entertain the proposition? The humbling fact stares us full in the face, that France has been, and we fear always will be, the leader in attempts to elevate the character of her people by a noble protection of the arts and sciences. "'Tis true, 'tis pity, and pity 'tis, 'tis true!" When English legislators can come down from the stilts of party we may hope for a modicum of consideration towards these means which ennoble and enrich a nation; but until that desirable millenium shall arrive we must be content to take at second hand, discoveries which would be generated amongst ourselves, were national recompence offered as the guerdon.

Independently of the two reports the work contains a general history of the progress of Photographic discovery in England and France from its birth, with an account of its practicable utility in the field of art, science and literature. To these are subjoined various statements of experiments and improvements with a full description of the perfected invention itself, the whole being illustrated with a series of plates and diagrams. There is, moreover, an account of the new method of Dioramic painting,* which concludes the work.

In the preface by the translator it is very truly stated of the original that "it is one of the most interesting works ever given to the world. It is the first manual of a new science, written by the discoverer of that science, and occupying at the present moment the

* Mr Daguerre is the inventor and proprietor of the Diorama in the Regent's Park.

attention of every philosopher throughout Europe, while nations have contended for the honour of priority." It is furthermore observed that

Photogenic science, of the practice of which this manual will render any one master, is to be viewed under two great relations,—its connexion with science, and its probable influence upon art. The importance of the fact, that light in its action upon bodies can be made to pencil, by its own spontaneous and ethereal agency, the creations of beautiful nature, cannot be questioned. The science of this new art has indeed not yet been evolved. The principle, we are assured by Arago, is latent among the mysteries yet to be revealed. But no one can peruse the details and operations described in the following pages, without perceiving that by them we gain another step in advance towards that consummation to which modern physics are hastening—namely, the identity of light—electricity—magnetism—gravity. In this sublime walk, the photogenic discoveries have unfolded a 'new order of possibilities,' and will aid in leading to one mighty cause, ruling the universe of matter in a dominion, second only to the spontaneity of the Creator. To the beautiful in art, the invention has yet a near relation. It will improve, without materializing its processes. It will give to the artist new subjects of study, in the most difficult department of his profession—the union of grandeur in mass—with exquisite detail: but it arms him with no mechanical contrivance, as has been feared, which may abate the honours of genius."

The following is an analysis of the report presented to the Chamber of Deputies by M. Arago on the 3rd July last, with which we shall conclude our notice of the book; premising, however, that they who buy both it and the apparatus, will find themselves in a situation to accomplish, without further assistance, all the objects at present contemplated by the invention.

The interest manifested both within these walls, and throughout Europe, in those labours, the result of which M. Daguerre recently submitted to the public, has been lively, striking, and unanimous. The Chamber, therefore, in all probability, expects of its commission only a simple and entire approbation of the Bill presented on this subject by the Minister for the Home Department. After mature reflection, however, it appeared to us that the office with which you had invested us imposed other duties. We have deemed that while applauding the happy idea of instituting national recompenses in favour of those inventors whose interests the ordinary legislation by patent could not protect, it was requisite, in the very first steps of this new career, to shew with what reserve, with what hesitation the Chamber would proceed. To subject to a minute and rigid examination the work of genius upon which we are this day called to legislate, will be to discourage ambitious mediocrity; for minds of this character also would otherwise aspire to intrude on your notice their ordinary and inconsequent attempts; it will prove that you intend to place in a most elevated region the recompenses which shall be demanded of you in the name of national glory,—that you will never consent to bring them down from this elevation,—or by lavishing them to tarnish their splendour.

These few remarks will enable the House to understand why we have been led to examine,—1st. If the process of M. Daguerre be incontestibly an invention. 2nd. If this invention will render to archeology and the fine arts services of value. 3rd. If it can become generally applicable. And finally, if we may hope that by it the sciences will be benefited.

Two centuries ago, a philosopher of Naples, Giovanni Battista Porta, discovered that if a very small hole be pierced in the window-shutter of a room, completely darkened in other respects; or better still, if the aperture be perforated in a thin metallic plate applied to the shutter, all the exterior objects

from which rays can enter through this opening will be represented on the opposite wall, in dimensions enlarged or diminished according to the distance. He found also that even with this imperfect apparatus, throughout a large extent of the picture, objects were painted in their natural colours, and with considerable truth of linear perspective. A short time afterwards Porta found that it was not necessary to have the opening very small, thus limiting the view, but that if the perforation were covered with a lentiscus or convex glass, it might be of any dimension. He remarked also the great improvement thus produced in the delineation. The images passing through the simple medium of the hole were without distinctness of position, intensity of colour, or neatness of outline. On the contrary, with the lentiscus, the mimic forms rivalled the vivacity and strength of nature herself, the focal distances being properly adjusted. It is well known that all these discoveries of Porta have become truly astonishing in precision of detail and strength of colouring since the art of constructing achromatic glasses has been brought to its present perfection. Formerly a simple lentiscus, composed of one kind of glass only, and, consequently, acting with as many separated focusses as there are colours in the undecomposed white ray, transmitted a comparatively indistinct image of objects. Now that we employ achromatic glasses which combine all the incident rays in one focus, and that a periscopic construction of the apparatus likewise has been adopted, great perfection has been given of its effects. Porta constructed also portable dark chambers; these were composed of a tube, longer or shorter, armed with a lentiscus as its optic instrument. A screen of white paper, or some prepared substance, occupied the focus, and upon it the images of external objects were received. The Neapolitan philosopher proposed his simple arrangements for the benefit of those who had not been taught drawing. According to him, nothing else was required in order to obtain the most perfect transcripts of nature than merely to trace carefully the outline of the focal image. These anticipations of Porta have not been completely realized. Painters and draughtsmen, those particularly who execute large views for panoramas, dioramas, and theatres, have indeed still recourse to the camera. They, however, employ it merely to group objects *en masse*, to trace their contours, and to fix them in their proper position and magnitude, according to the principles of linear perspective. As to those effects proceeding from the imperfect transparency of our atmosphere, whence arise all the charms of tone and colouring, which by a sufficiently erroneous appellation are designated by the term aerial perspective; the most experienced artists are aware that in reproducing these the camera affords them no assistance. No person, however, has ever witnessed the neatness of outline, precision of form, the truth of colouring, and the sweet gradations of tint, without regreting that an imagery so exquisite and so faithful to nature could not be made to fix itself permanently on the tablet of the machine, who has not put up his aspiration that some means might be discovered by which to give reality to shadows so exquisitely lovely? Yet, in the estimation of all, such a wish seemed destined to take its place among other dreams of beautiful things, among the glorious but impracticable conceptions in which men of science and ardent temperament have sometimes indulged. This dream, notwithstanding, has just been realized. Let us take, then, the invention in its germ, and mark carefully its gradual unfolding.

Long ago the alchemists had succeeded in forming a solution of silver in muriatic acid. This compound, which assumes the appearance of a white salt, they called lunar or caustic silver. This salt possessed the remarkable property of becoming black by light, and of blackening more or less rapidly in proportion to the intensity of the incident rays. Cover a sheet of paper

with a wash of lunar caustic, or, as we say at present, with a wash of chloride of silver; form upon this by means of a lens the image of an object; the shaded parts of the image—the parts, that is to say, upon which no light falls—will remain white; the portions, on the other hand, strongly illuminated, will become completely black; the demi-tints will be represented by greys more or less dark. This monochrome, in short, will be the reverse of the real object as respects the lights and shadows. Again, if an engraving be placed upon a sheet of paper moistened with a solution of chloride of silver, and both be exposed to the solar light, the engraving being uppermost, the dark lines of the latter will intercept the rays, and the corresponding portions of the paper below will retain their original colour. In those parts, on the contrary, which lie immediately under the lights in the engraving, the solar rays, acting through the imperfect transparency of the print, will blacken the chloride wash. The necessary consequence of this operation will be a copy of the engraving, correct in its outlines, but reversed in its effects, the lights being reproduced in shadows and the shadows in lights. These applications of this curious property of the chloride of silver, one would think might have readily occurred to the alchemists, the first discoverers of the substance, or to their early successors, who devoted more attention to practical results. Not so, however, was the case. We must descend to the first years of the 19th century before we detect even the commencement of the photographic art. About this time our countryman Charles, in his lectures, made use of a prepared paper to produce silhouettes, or black profiles, by the action of light. Charles died without describing the preparation which he employed. As the historian of science, under pain of falling into inextricable confusion, is not authorised to proceed, except upon printed and authentic documents, it is no more than justice to assign to Wedgewood, the celebrated porcelain manufacturer and inventor of the pyrometer for high temperatures, the first application of this new art. The memoir of Wedgewood appeared in 1802 in the number for June of the Journal of the Royal Institution of Great Britain. The author there proposes by means of skins, or with paper, steeped or washed in chloride of nitrate of silver, to copy paintings on glass, as in the windows of churches, and also engravings. "The images formed by means of the camera obscura," we quote faithfully a passage from the article, "have been found to be too feint to produce, in any moderate time, an effect upon the nitrate of silver." The commentator upon Wedgewood's experiments, the illustrious Davy, does not contradict the assertion relative to the images of the camera. He merely adds, as to his own experiments, that he has accomplished the copying of very small objects by the solar microscope, but only at a short distance from the lens. Finally, neither Wedgewood nor Sir H. Davy discovered how, the operation once finished, we were to give it permanence, or, if I may be permitted the expression,—to remove from the canvass of their pictures the defect of becoming black by the light. It thence resulted that the copies which they had obtained could not be examined in day-light, for in a very short time they became uniformly black, and all lineaments of the previous objects disappeared. What was this in reality but to produce imagery so evanescent that only a furtive glance could be cast upon the work, and that by the light of the lamp? The whole would have vanished in a few seconds if these delineations had been examined in day-light. The deed of co-partnery between Messrs Niepce and Daguerre, for mutually investigating and following out the subject of photography, is fortunately registered among the public records, and bears date Dec. 16, 1829. Later deeds entered into by M. Isidore Niepce, as his father's heir, and M. Daguerre, distinctly mention, in the first place, the improvements made upon the earlier methods of the philosopher of Chalons, by the Parisian artist: in the second instance they also particularize processes entirely

new, invented by M. Daguerre, and possessing the advantage (in terms of the deed) "of producing images with sixty or eighty times greater rapidity than the earlier application of the photographic principle." The feeblest rays impress the substance of the Daguerréotype. The effect is produced before the shadows have had time to change in any appreciable degree. The results are certain, by the operator's acting according to a few very simple directions. Finally, the images being once produced, the solar rays continued for years, affect neither their purity, brightness, nor harmony.

To copy the millions and millions of hieroglyphics which entirely cover to the very exterior the great monuments at Thebes, Memphis, Carnac, &c. would require scores of years, and legions of artists. With the Daguerréotype, a single man would suffice to bring to a happy conclusion this vast labour. Arm the Egyptian Institute with two or three of Daguerre's instruments, and on several of the large engravings in that celebrated work, the fruit of our immortal expedition, vast assemblages of real hieroglyphics would replace fictitious or purely conventional characters. At the same time these designs shall incomparably surpass in fidelity, in truth of local colour, the works of the ablest artists. Again, these photographic delineations having been subjected, during their formation, to the rules of geometry, shall enable us, with the aid of a few simple data, to ascertain the exact dimensions of the most elevated parts, and of the most inaccessible edifices. If, finally, it be asked, can art, viewed in its own interests, be expected to derive advancement from the examination, from the study of those forms designed by the most subtle, the most refined agency in nature—the rays of light?—M. Paul Delaroche shall reply to the question. In a letter written at our request, this celebrated painter declares that the processes of M. Daguerre "carry to such perfection certain of the essential principles of art, that they must become subjects of study and observation, even to most accomplished artists." What strikes him in the photographic designs is, that the finish "of inconceivable minuteness disturbs, in no respect, the repose of the masses, nor impairs, in any manner, the general effect." "The correctness of the lines," remarks M. Delaroche, in another place, "the precision of the forms in the designs of M. Daguerre, are as perfect as it is possible they can be, and yet, at the same time, we discover in them a broad and energetic manner, and a whole equally rich in tone as in effect. The painter will obtain by this process a quick method of making collections of studies, which he could not otherwise procure without much time and labour, and in a style very far inferior, whatever might be his talents in other respects." After combatting, by excellent arguments, the opinions of those who have imagined that photography will be injurious to our artists, and especially to our able engravers, M. Delaroche finishes his letter with this reflection, "In conclusion, the admirable discovery of M. Daguerre is an immense service already rendered to art." We shall not commit the unpardonable fault of adding anything to such testimony.

The Daguerréotype does not demand a single manipulation which is not perfectly easy to every person. It requires no knowledge of drawing, and does not depend upon any manual dexterity. By observing a few very simple directions, any one may succeed with the same certainty and perform as well as the author of the invention. The promptitude of the method is perhaps that which has most astonished the public. In reality ten or twelve minutes in the dull weather of winter are amply sufficient for taking a view of a monument, a section of a town, or a landscape. In summer this time may be reduced one-half. Under the skies of the south not more than two or three minutes will be necessary.

The preparation employed by M. Daguerre is a re-agent much more sensible to the action of light than any other hitherto in use. Never have the

rays of the moon, we do not say in a natural state, but even when concentrated by the most powerful lens, or in the focus of the largest reflector, been capable of producing any perceptible physical effect. The plated discs prepared by M. Daguerre, on the contrary, receive impressions from the action of the lunar rays and the succeeding operations to such an extent as permits the hope that we shall be in a situation to make photographic charts of our satellite. In other words, in a few minutes we shall be able to execute one of the longest, most tedious, and most delicate operations of astronomy. An important branch of the sciences of experiment and calculation,—that which treats of the intensity of light, or photometry, has made little progress. The philosopher approaches pretty nearly to the determination of the comparative intensities of two luminous sources when near each other, and simultaneously visible; but the means of ascertaining this relation are imperfect when the condition of simultaneity does not exist—when the question regards a light visible at present, and one which will not be seen till after the first has disappeared. The artificial lights, to which as standards of comparison the observer in the case in question is induced to have recourse, seldom maintain the requisite permanence and steadiness; nor, more particularly as respects the stars, do our artificial lights possess the necessary whiteness. From these causes, there exist very great discrepancies between the determinations of the comparative intensities of the sun and moon,—of the sun and stars, as given by men of equal scientific acquirements. Thence also the sublime inferences deducible from these latter comparisons, in relation to the humble place occupied by our luminary amid the millions of suns with which our firmament is studded, are still veiled in reserve, even in the works of those authors whose least fault is timidity.

Let us not hesitate, then, to announce the fact; the re-agents discovered by M. Daguerre will speed onwards the progress of those sciences which confer the highest honour on the human mind. By their aid the philosopher will be enabled henceforth to proceed on the principle of absolute intensities; he will compare lights by their effects. If he find it useful, the same tablet will present him with the impressions of the dazzling beams of the sun, and with the pencillings of rays three hundred thousand times fainter than those of the moon---the rays of the stars. These different imprints he will equalize, either by reducing the stronger lights,—through means of excellent methods, the result of recent discoveries, the explanation of which would be here misplaced,---or by allowing the brightest rays to operate, say, only for a second, and continuing according to circumstances the action of the others for half an hour. In short, when observers apply a new instrument to the study of nature, what they expected from it has always proved little indeed compared with the series of discoveries which the instrument originated. In this instance it is upon the unforseen that we are especially to reckon. We might speak, for example, of certain ideas which we entertain of methods of rapid investigation which topography might borrow from photographical principles. I shall attain my object more directly, however, by introducing here a curious remark related to us yesterday by M. Daguerre. According to his observations, the hours of the morning and those of the evening, equally distant from mid-day, and consequently corresponding to the same altitudes of the sun above the horizon, are not alike favourable to the production of photographic images. For example, at all seasons of the year, and under circumstances of atmospherical influence, in appearance the same, images are formed with more rapidity at eleven o'clock in the morning than at five in the afternoon, at eight o'clock than at four, at nine than at three. Suppose this result verified, and the meteorologist obtains an additional principle, one element more than he possessed for the construction of his tables. Thus to former observations on the state of the thermometer, barometer, hygro-

meter, and transparency of the atmosphere, there remains to be added an element not detected by the instruments previously in use,---an account must be taken of a particular absorption, which cannot be without influence upon many other phenomena, on those even connected with physiology and medicine.

Gentlemen, we have thus endeavoured to collect into one view, whatever the discovery of M. Daguerre presents that is most interesting under the four heads of Novelty, Utility to the Arts, Rapidity of Execution, annd the valuable resources which it offers to science; we have earnestly laboured to make you participate in our convictions, because these are lively and sincere, because we have examined all,---studied all with the sacred faithfulness imposed upon us by your suffrages—because, had it been possible to misconceive the importance of the Daguerréotype and the place it is destined to hold in the estimation of men, all our doubts would have ceased on perceiving the eagerness of foreign nations to lay hold of an erroneous date, of a doubtful fact, of the slightest pretext, in order to stir up questions of priority for the purpose of adding to their own crown of discovery, the beautifnl ornament which the photographic inventions will ever form. Let us not forget to proclaim that all discussion on this point is now at an end, and must cease, less from the claims to authentic priority produced by MM. Niepce and Daguerre than by reason of the incredible perfection of the results at which M. Daguerre has arrived.

METEOROLOGICAL PREDICTIONS FOR OCTOBER.

In laying before the public the following predictions, it is not pretended that every day shall be without failure. There is much yet to be learned. The influence of the Asteriods is but little known, and years of close attention will be required before any positive conclusions can be drawn from their relative positions with the other heavenly bodies. The same remark is also applicable to the Georgium Sidus. Infallibility, therefore, cannot be expected in all cases.

1st. Cloudy, with tokens of showers.—2d. Overcast; rain.—3d. Fair, yet cloudy at times; tokens of showers.—4th. Signs of rain, and in some places hail.—5th. Cloudy, tokens of mist, of small rain.—6th. Strong tendency to rain; windy.—7th. Windy, with rain, clear late P.M.—8th. Still tokens of dull, cloudy weather, and tendency to showers.—9th. Overcast; changeable.—10th. Dull; tendency to showers. 11th. Still heavy weather: rain towards midnight.—12th. Very unsettled, at times turbulent; rain or sleet; colder.—13th. Fair at times, yet a tendency to rain.—14th. Gloomy; cold showers in many places.—15th. Cloudy and wet; tokens of wind P.M. 16th. Cold and windy; frequent showers, rain or sleet.—17th. Still heavy tokens of showers.—18th. Windy, with strong tendency to rain or hail showers; therm. rising. —19th. Temperature higher; windy, flying showers, large white clouds.—20th. Generally fair, changes P.M.—21st. Cloudy, with wind; tendency to showers.— 22d. On the whole fair; therm. rising; evening fine; meteors.—23d. Fine large wool packclouds; tokens of thunder; therm. higher this day than on the 16th; tropical showers.—24th. Fair, with intervals of cloudy weather.—25th. Tokens of much electric action; windy; tendency to hail showers. See *Leithead's Electricity*, chap. 22.—26th. Fair; misty or cloudy towards midnight.—27th. Cloudy and dull. —28th. Windy, with tendency to mist or small rain; a heavy day.—29th. Overcast; rain; windy.—30th. Cloudy and dull, probably showers.—31st. Seems fair, yet cloudy; cold, and probably misling showers towards midnight.

SCIENTIFIC CONGRESS AT PISA, AND ILLIBERAL CONDUCT OF THE POPE.

At this grand meeting of European *savans*, which will take place on the 15th of October, and continue till the 23d, several of our most eminent philosophers and naturalists have declared it their intention to assist: amongst others, we may mention the names of Sir John Herschell, Professors Lloyd and Robinson, and J. W. Lubbock, Esq., F.R.S. and President of the Royal Astronomical Society. The British geologists will not appear in great force, as Dr Buckland and Professors Whewell and Sedgwick will be engaged with their classes at Oxford and Cambridge; but Messrs Greenough and Murchison, it is expected, will be present to support their favourite science. The Congress will be held under the immediate auspices and patronage of the Grand Duke of Tuscany, who has provided accommodation on the most liberal scale for all members and distinguished visitors whose names shall be transmitted to the Secretary of his Imperial Highness before the 7th of October. Prince Charles Bonaparte, whose ornithological researches have shed an additional glory on the house of Napoleon, will preside; the Grand Duke himself being content to be considered merely a member.

When we compare such high-minded liberality with the conduct of the reigning Pontiff on this occasion, the contrast will appear disadvantageous indeed to the character of the father of the Roman Catholic Church. Pope Gregory and his College of Cardinals have proved themselves to be far behind the spirit of the age, by a circular which their organ, Cardinal Lambruschini, has sent to the Chancellors of the several universities in the Roman states, forbidding the professors and directors of the cabinets of natural history and the botanic gardens *to visit* Pisa on this occasion, or even *to correspond* with the philosophers there! His holiness, it is said, has "strong reasons" for this prohibition; we should be glad to know them. What can he be afraid of? Does he fear that the discoveries of a Herschell, a Buckland, or a Faraday, will subvert Christianity?—that physical science will undermine the "eternal city?"—that modern astronomy and geology may neutralize the musty lore of the Vatican?—that a more extended knowledge of the laws which govern the universe, will supersede the legends of the dark ages, and the dreamy philosophy of the fathers?—or that chemistry may be the means of blowing up St Peter's, and causing its proud dome to topple on his head? We had supposed that Christians, even among the Catholics, had long abandoned such fears, and that when the horrors of the inquisition were no longer practised, liberality, benevolence, and a desire to promote science and education, had identified themselves with Christianity all over the world. Cardinal Lambruschini's circular, however, has dispelled the pleasing illusion, at least so far as regards the heads of the Roman Catholic church.

A similar ill-judged policy has, unfortunately, too frequently characterized the cabinet of St Peter; and for the consequences of such policy, we need only refer to the grand blow which was given to Romish influence throughout Europe by the persecution of Galileo.

Such intolerance, however, against science—against the dearest interests of the whole civilized world,—will not be borne in the middle of the nineteenth century; and we cannot help expressing astonishment that the secretary of Pope Gregory could be induced to do that which even Gonsalvi, with all his boldness and self-sufficiency, would never have dared to attempt. That Cardinal confined himself to the fettering of mere education—to the warping of the juvenile mind; but Lambruschini has dared to grapple with science itself, and will no doubt visit with severe punishment those professors who may openly or covertly endeavour to promote its interests. Such are the inquisitional proceedings which make the triple-crown sit loosely on the brows of the successors of St Peter!

THE VOICE OF TIME.

THOUGH armies await not my regal nod,
I come with the main and might of a god;
When mortal kings I pass in my power,
They fade as the dew from the sun-lit flower;
Sceptres they dream not so soon to resign
Like reeds of the plain are broken on mine;
The nations they ruled have gone to decay,
Others must follow as mighty as they.

Silent but certain the changes I bring,
As I sweep over all on my tireless wing;
At my touch the viper hath nursed her brood
Where pillar, and dome, and palace have stood.
Oceans have roll'd o'er the once green sod,
Where my feet unwashed by the billow trod,
While a thousand graves, with a voice sublime,
Proclaim me still as the conqueror Time.

Young beauty may smile in her spring-bloom pride,
And the gay of heart may laugh at her side,
But my hand shall steal the rose from her cheek,
And love there in vain for one witchery seek;
Her eye that had flash'd like an orb of light,
Shall be darkly quench'd in age-born night;
And even ambition forget to climb,
While a world turns pale at the deeds of Time.

HENRY JOHN DANIEL.

Lostwithiel, Cornwall, Aug. 15.

NOTICES OF
PAINTINGS, PRINTS, BOOKS, MUSIC, MUSICAL INSTRUMENTS, AND MINOR WORKS OF ART.

PRINTS.

MANSIONS OF ENGLAND IN THE OLDEN TIME, *consisting of Twenty-six existing Views of some of the most characteristic features of the Domestic Architecture of the Tudor Age, and also illustrating the Costumes, Habits, and Recreations of our Ancestors; drawn on stone, in the tinted style, with raised lights, from his own original sketches (made expressly for this work)*, by JOSEPH NASH. Printed, with the latest improvements in Lithography, by C. Hullmandel; published by M'Lean.

THIS is an extremely curious and very picturesque volume, bright with the sunshine of bygone ages, redolent of interesting recollections, and pregnant with cheering anticipations. What renders it trebly acceptable, or at least what greatly enhances its value, is, that Mr Nash, after carefully delineating the old mansions, has peopled them with figures attired in costumes, not such as were exactly coeval with their several erections, but still dressed in such old fashions as may be supposed to have prevailed within them after time had mellowed down their new-built rawness, and reduced them to a state tending toward that in which they are severally represented; so that there is a gratifying homogeneousness and harmonious probability between the ancient architecture and the figures introduced. For example, the first plate after the title-page, which title-page, with obvious analogical propriety, is an entrance gate, is of the interior of '*The Hall of Hatfield House*,' in Hertfordshire, a lordly mansion, which is believed to have been designed and erected by Thorp, who was eminent as an English architect during the early part of the reign of Elizabeth. The building bears the date of 1611, and was erected for Robert first Earl of Salisbury. Soon after that period the Spanish hat and feather were introduced; cloaks and slashed sleeves were in vogue, and the dinner-cloth still continued to be laid in the great hall. The figures are here attired according to these fashions; a servant at the lower end of the apartment is entering with a tray of viands, and we are not sure that the Royal James, who must have been an occasional visitant here, has not seated himself in his unceremonious way, and is calling to the three gossiping nobles on the near ground that "the cock-a-leeky is cooling." Hatfield House has continued from that time to the present in the possession of the Cecil family. The spectator cannot fail to see that the hall is a superb specimen of Elizabethan decoration, of which the effect is said to have been much improved by the removal, under the direction of the present Marquis of Salisbury, of certain old paintings of saints that disfigured the upper part of the lower end, for which his lordship has substituted richly carved panels that harmonise with those beneath.

'*The Stair-case*,' which constitutes the subject of the second plate, with its rampant shield-bearing lions, and its amplitude, has an air of considerable grandeur, notwithstanding the uncouthness of the band-ornaments of the ceilings, and the attempts at being Arabesque, which only serve to show that comparative paucity of architectural invention has always existed in England with regard to a national style of decoration. Yet, upon the whole, Hatfield House is one of the most admired examples of the Elizabethan style of architecture.

'*Wakehurst*,' also of the age of Elizabeth, though much smaller, is in a superior taste to Hatfield. It is situate near East Grinstead, in the county of Sussex, and is a brick building of one story, the ground plan of which is in the usual form of half an H. It was erected by a member of the Culpeper family, and is now the property of Captain Peyton, and tenanted by John Fairlie, Esq. The hall is remarkable for its small dimensions, its richly carved chimney-piece, and ornamented ceiling; indeed there is nothing but its situation and the paved floor to distinguish it from an ordinary dining-room, its height not reaching above the ground-floor. The figures which Mr Nash has here introduced are of a somewhat later age—that of the painter, De Hooghe, of whose handy-work the group strongly reminds us. The dining party, who are taking their meal at a central table, consist of apparently the lord and lady of the mansion; their little daughter is standing; and an elderly gentleman, perhaps the father of the lady, is discoursing. The ceiling, chimney-piece, and fire-place are

highly enriched with scroll-work, flourishings, heraldic devices, and other ornamental carving, including two little saints standing on their sacred niches, which are somewhat oddly accompanied by a pair of Anacreontic-looking caryatide terminii of larger dimensions, introduced in the manner of Rubens. It is just possible that Rubens may have designed them, for they seem of a later age than that of Elizabeth; and with the armorial bearings, perhaps, of the Culpepers, which is handsomely framed between them, are executed in a better style than we think any English carver of the Elizabethan age could have accomplished; but whether so or not, here they are oddly clustering in the same pile with the little Catholic saints. There is a door-entrance that is more certainly of the Elizabethan era. The ceiling is of considerable beauty. Military and hunting trophies, consisting of swords, helmets, cuirasses, cross-bows, and stags' horns, adorn the walls; and the lofty-backed old chairs, the hand-irons, and other furniture correspond. The general effect of this lithograph is bright and clear, and much as if Mr Nash had studied it from one of De Hooghe's pictures, where black, and scarlet, and bright reflections gratify so highly the attention of the connoisseur. But we somewhat question the propriety of the light on the principal figures being received through the right hand windows, while that which falls on the attendant who is approaching with fruit, and of the dog who is feeding, comes from the left. We see that there is a window in that direction, but a window is not the sun, and our objection is not thereby removed. The whole together is, however, very picturesque, notwithstanding the seeming anomaly and is executed with the utmost taste and freedom.

The '*Wakehurst Staircase*,' which is exhibited upon a separate plate, is very peculiar, and of some beauty. It looks, at the first glance, like a sort of *sanctum*, or temple within a temple; or (as we read in Mr Nash's programme), as if it had been forgotten, and afterwards added by partitioning off part of the lobby; yet, of course, the *stairs*, if not the stair-*case*, must always have been where we now see them. We think, from the manner of its meeting, or ending against, the middle of an old window, as well as from the odd sort of Ionic pilasters which adorn it, and the pretty ornamental frieze of lozenges above, that this case, or screen, *is* of subsequent erection to the rest of the building. Be this as it may, Mr Nash has given to this subject a capital effect; contributary to which is the tasteful introduction of two children amusing themselves with a dog; and another of De Hooghe's ladies, attired in a black boddice, trimmed with white ermine.

'*Bramshill*,' which forms the subject of lithograph the 8th, does not appear to us—speaking of it as an architectural production—to merit the encomiums which have been bestowed on it. The central part of the front, in especial, which is the principal object in Mr Nash's picture, appears a combination, in nearly equal parts, of the elements of weakness and ugliness. But the artist has contrived to render it not unpleasing as a picture, by introducing on the steps a cavalier taking leave of a lady and her little daughter ere he mounts his steed, which being black, clears out the shadows in some measure, and in a degree prevents the arched recesses from seeming dark spots, and gives its true value to the stone colour in half tint. We have no idea of anything of the kind more architecturally barbarous than the three tiers of square pillars tapering downward, which are placed on either side of the oriel window. They have a topsy-turvy effect, and suggest that the builder has here obtained a competition job awarded him by incompetent judges. But we wish not to be obtrusive, or to seem dogmatical on a matter of taste, and shall therefore subjoin—as is but fair—what Mr Nash has written of the edifice. He says—"This princely mansion is situate about two miles from Hertford bridge, on the road to Basingstoke. It was intended as a residence for the amiable and accomplished Prince Henry Frederick, eldest son of James I; and the magnitude of its dimensions, although it has since suffered considerable diminution, plainly indicates a royal residence. The porch is a superb example of the curious admixture of styles in the architecture of the reign of James I. The Oriel window is particularly elegant." The window itself, including the bracket which supports it, is certainly the best part.

The other view of Bramshill is more interesting. It affords us a peep into the pleasure-ground; and the artist has carried back the spectator's mind agreeably toward the period of its youth, by introducing a party of gentlemen dressed in the costume of Charles the First's time, playing at bowls. They are

> "Such as in wits' and merry women's days,
> Suckling preferr'd before his walk of bays."

And we would almost venture a wager that Suckling himself is here present, making the spaniel beg, to please a lady on the foreground. The lady stands by with much of beauty and blandishment, and *is* pleased; and the group actually engaged in play, including the gentleman who leans against the rectangular pillar, is composed with taste and originality. But we still see nothing to admire in the architecture of Bramshill, unless it be the terrace flight of steps at a little distance, leading to the garden.

Lithograph the 11th presents a view within the parlour of a *Southern* in Gloucestershire, where a weary sportsman of the olden time, having entered after the toils of the chase, and cast aside his hat, gloves, and hunting-spear, and taken off his spurs, has thrown himself into a lofty-backed easy chair, and there we catch him fast asleep as a church. He has taken care, however, first to recruit exhausted nature, as is attested by the flask, ale-jug, and remains of a venison pasty, which stand on the table beside him. His tired dogs meanwhile are reclined on the hearth, where

"The crackling faggot flies;"

and the listening ear of contemplative fancy may perhaps detect the cricket chirping. The light received through an old bay window falls brightly on the hounds and sleeping sportsman, and is broadly received on a white stone chimney-piece, above which appears certain very curious old carved and panel-work, including heraldry, cherubs, and scroll-flourishings, apparently supported by four above, and two below, of those half terminii and half caryatides which we noticed in the view of Wakehurst, excepting that these are not quite so well executed. Southem is an old mansion of low elevation and plain exterior, about three miles from Cheltenham. It is of the time of Henry VI, and was formerly a seat of the De La Bere family. The chimney-piece represented by Mr Nash is of a much later date than the building. It is now the residence of the Right Hon. Lord Ellenborough, who has completely restored it in an appropriate taste.

'*Westwood*,' about eight miles from the city of Worcester, and near Ombersley, is a noble pile, originally built in the reign of Henry VIII; but additions have been subsequently made to its exterior, though its ancient character has undergone no natural alterations. It is the residence of John Somerset Packington, Esq., in whose family it has continued since its first erection. The gate-house represented in the plate is a striking feature of the edifice. The artist has taken the liberty of substituting a parapet, composed of the armorial bearings of the family, a star and a sheaf (that appear in every part of the external decorations of the mansion), for the unpicturesque blank wall. The stars and sheaves, though certainly ornamental, would probably not prove so effectual in keeping out robbers as the unpicturesque wall, but are nevertheless in good keeping with the mansion itself. The astrologers and cabbalists of the age of Henry had two favourite stars—that of *health*, and that of perfection; the present star with five points was esteemed to be the star of health, if we rightly recollect. The curved and pinnacle-surmounted gables of this gate-house, with the little lozenge and circle beneath, are simple and of infinitely more beauty than the complex bandage ornaments which occur so frequently in other of these examples. The effect is here very natural, and the return of the sporting party is aptly introduced.

'*The Drawing-room at Boughton Malherbe, Kent*,' has a general air of ornamental richness, which, with its "high embowed roof," its latticed and heraldic windows, its rich abundance of panel-work, and its ancient furniture, might be esteemed superb, were it not disfigured by the same sort of ill-principled pilasters, suggesting weak support, to which we objected in our remarks on Bramshill, and by certain twisted bands of true-love knots, with other twistings of still less intelligible meaning, on the ceiling. The chiaroscuro here is well contrived, and the figures are appropriately introduced; but Mr Nash seems too accomplished a master of the ceremonies ever to introduce improper visitors to his drawing-rooms. The lady dressed *a là* Mary Queen of Scots, who holds the theorbo, and the knight who lolls with easy negligence against the wall, resting his hand on her chair-back, and dressed in his Spanish hat and feathers, are evidently discoursing of music; while she who sits in the window recess, and contributes so much to the general effect, is engaged (as we guess) in reading Shakspeare; and something like connection is kept up in the disposition of the figures, through the agency of a child dressed in black, who is playing with the cat. This curious old mansion, of which little remains to show its original magnificence, stands five miles westward of Charing. It was built by Sir Edward Wotton,

Treasurer of Calais, and Privy Councillor in the reign of Henry VIII. The drawing-room represented in the plate is supposed to have been refitted in its present style for the reception of Queen Elizabeth in 1573; and the wagon-roofed ceiling, with its Moorish decorations (not very Moorish, though sufficiently barbarous, if we compare it with the Al Hamra), "is one of the most beautiful specimens of interior embellishment in the kingdom." Thus writes Mr Nash, but we cannot have the honour of agreeing with him. Boughton Malherbe was the birth-place of the famous Sir Henry Wotton; and is now the property of Earl Cornwallis, but used as a farm-house.

The '*Hall at Franks*,' in Kent, displays much of beauty, comfort, and domestic convenience. The rectangularity of the wainscot panel-work and picture-frames is in good apposition to the curved ornaments of the ceiling, which are ingeniously contrived, and in a taste very superior, in our estimation, to that which has been praised for its Moorish beauty at Boughton Malherbe. We rub our hands here. The dinner-cloth is laid, the servants are setting on the dishes, and a cheerful party is entering. Who would have any objection to join them in this sun-shiny hall? The chiaroscuro is as bright and effective as if Cuyp had planned it. Franks is an ancient brick-built country-house, on the banks of the Darent, between Dartford and Farningham. It was erected in 1596 by Lancelot Bathurst, Alderman of London (an elder branch of the Bathurst family), who bought the estate, held in the reign of Henry III by a family named *Frankish*, whose tombs are in Horton church. It is now the property of John Tasker, Esq., having become his by marriage; but is in a dilapidated condition, and only partly occupied as a farm-house. The hall is curious, as affording an example of the latticed galleries that are found in old mansions, where the master or mistress could watch unobserved the doings of their household; these attest the vigilant surveillance exercised by our ancestors over their domestics; so that King James's "*lug*" in the Tower of London, of which Sir Walter Scott treats, was nothing very extraordinary.

The '*Entrance of the Hall, Sutton Place, near Guildford, in Surrey*,' is a work of great merit and great beauty, with which no inconsiderable portion of grandeur is artfully blended; and is treated with a corresponding degree of taste and feeling on the part of the painter and lithographer. Nothing in the volume has more successfully hit the mark that artists aim at, where the charm of poetry is superinduced on the truth of nature. In point of quantity it contains not much—a Gothic doorway and window, and the lower part of an octagonal buttress or turret, but in respect of quality it is of a very high order. Near the entrance is judiciously seated an elderly sportsman with his cross-bow and bugle, who, having just returned from the field, has brought home a brace of hares. He sits as if leisurely giving instruction as he rests on his weapon to a sturdy little boy, a military aspirant, who is exercising before him, shouldering the lower portion of a broken tilting spear; while of his dogs one is stretched at his ease beside his master, and the other is in very natural action, peering in at the hall window as if he hoped to see there his mistress, who really is approaching from an inner corridor with her daughter and a greyhound. The twelve little Cupids, who, in separate rectangular compartments, introduced over the door, are piping and dancing, is a very peculiar feature here: we have seen nothing like it elsewhere. Sutton Place is a fine specimen of brickwork of the time of Henry VIII. It is richly and profusely ornamented with tiles of elaborate workmanship; and (which is peculiar) even the mullions and quoins are of brick. It assimilates very much in its details to the style prevalent in France at that period, popularly called *cinque-cento*; the hollows of the window mullions being ornamented with beautiful arabesques [all cast in moulds, or stamped while the clay was moist]. The windows of the hall are enriched with splendid stained glass. The [punning] device of the family, a *tun*, and the initials, W. R., of their name, adorn the tiles, and produce a rich effect. But nothing that we have seen in this rich volume is more mildly harmonious, or in better keeping throughout, than is the light and shadow of this lithograph. Everything is here sufficiently forcible, yet nothing is forced. Though we shall never say to fine art, "Hitherto shalt thou come, but no further; and here shall thy proud waves be stayed;" yet we never felt more disposition to say so to *this species* of art than upon the present occasion.

The last five lithographs contained in this interesting volume are of '*Haddan Hall, in Derbyshire*,' of which the space we can allot to this article of Nash's 'Ancient Mansions of England,' permits us to notice but three (the second, the fourth, and the

fifth). We have been induced to share our critique on the present collection with 'The Probe,' and he who may wish to read comments upon every individual subject contained in Mr Nash's folio, we trust will not think it too much trouble to consult both 'The Probe' and 'Polytechnic Journal.'

Haddon Hall, near Bakewell, in Derbyshire, is well known from its picturesque situation in a country celebrated for its enchanting scenery, and from its interest as a fine specimen of the old castellated mansion. It is probably the most perfect of the ancient baronial mansions remaining, and is certainly better calculated than any other to convey an idea of the large establishment and extensive hospitality of the old English baron. It has been untenanted more than a century, but has escaped the fate which under such circumstances usually befals the residences of the old nobility. These, to suit the more moderate household and private style of living of their successors, are gradually pared down until a very small portion of the once princely mansion can be traced in the dilapidated farm-house. This may be regarded as the sixth age of the decaying mansion previous to its ruined state, when the ivy-mantled walls afford shelter only to owls, forming the

——— "last scene of all,
That ends this strange eventful history."

'The Probe' made some trivial mistakes in commenting a few weeks back on the lithograph of Haddon dining-room, ascribing certain writing to Mr Lake Price, which was from the pen of Mr Nash, which, however, seeing that they are twin spirits and bear a strong family resemblance, was very excusable. It was, in fact, a slip of the memory, and no error of the judgment. But 'The Probe' is right in what it mentioned of the old carved panels with the heraldic shields; and right in stating that near a bay window a lady, habited in the costume of the reign of Elizabeth, sits listlessly attentive—willingly abandoned, as it were, to the delicious musical sentiment—to the melodies of a Spanish guitar or theorbo which a cavalier newly arrived seems attuning to her taste, while sun-shine streams in at the window diagonally; so that all seems symphonious luxury, or elegant comfort blending into it.

The print is beautiful for its simplicity, and for the natural truth with which the sunlight, admitted through the latticed bay window, illumines the female figure and glances athwart the wainscoting; beautiful for the well-placed dark figure of the musician, and for the vigorous *chiaro-scuro*, which is produced without the least violence, to which the white drapery of the lady and the dark dress of the musician so mainly contribute.

Our scene of the '*Banqueting Hall and Christmas Revels of Haddon*'—no longer simple, but abounding in every variety of obstreporous merriment—is contrasted to the refined langour—where the mind enjoys and the body is passive—of the ancient dining-room; and is the very counterpart to that from the pencil of Mr Buss, of which we have had occasion to treat in our review of the Eastern Exhibition, even to the trait of calm contrast to the general and clamorous uproar that is presented by the re-entrance of the lord and lady of the mansion to witness the enjoyment of their household and retainers. As pictorial compositions, however, they are very different. Here the light which illumines the piece does really proceed from the central chandelier, and the shadows consequently fall to the right and left; in short, the light radiates, and the shadows are projected accordingly. Here the major-domo is more gigantically dressed up, and wields his thundering brand; and the group of morris-dancing fools around him, with their black hoods and jingling bells, are more conspicuous. Here are introduced, in addition to the ferocious dragon, the savage man (Orson) with his club, and the tilting knight (Valentine) on his hobby, with whom him of Eglinton may not compare. Here the mean fragments of the feast do not bestrew the foreground, but are altogether omitted. Here the musicians play more heartily than from the orchestra of Mr Buss; and here is no command to "*be* merry," but everything seems spontaneous, and the effect is accordingly. There is a general diffusion of more heart and soul, and less of made-up mirth.

The volume closes with an interesting view of the '*Interior of the Chapel*' at Haddon Hall, of which the nave is supported by pointed arches, and the chancel is terminated by a rich Gothic window, where the peasantry and yeomen mingle in their devotion with the inmates of those loftier pews which stand within the chancel; and as the minister delivers his precepts, such a general sentiment of piety appears to per-

vade the congregation, that the picture seems an abstract idea of the devotion that ought to prevail within a Protestant country church. The font is unadorned with sculpture, and the sustaining arches are also plain. The figures are judiciously introduced, and happily varied; and by keeping the aisle in shadow, and filling the nave with light, the artist has produced an impressive *chiaro-scuro*.

BOOKS.

JOURNAL OF RESEARCHES IN GEOLOGY AND NATURAL HISTORY, by Charles Darwin, Esq., M.A., F.R.S., Secretary to the Geological Society. London: HENRY COLBURN.—This volume contains, in the form of a journal, a sketch of the observations in geology and natural history which were made by the author during a five years' voyage in H.M.S. 'Beagle' to the various countries which the Commander, Captain Fiztroy, was commissioned to visit, under the sanction of the Lords of the Admiralty. The opportunities which it afforded of accumulating vast stores of information, either quite new or corroborative of previous statements, were more than ordinarily great, and Mr Darwin appears to have made the most of them. Much credit is due to the author for making his book readable by every body. The very names "geology," and "zoology" frighten half mankind from the perusal of works under those titles, not because the subjects want interest of the deepest kind, but because the general method of treatment has been dry, technical, and unexciting. We do not believe that descriptions of scientific researches into the remotest secrets of nature are less valuable by reason of their being vernacularly told, and Mr Darwin seems to be of our opinion, for he has given the world a volume from which every part of even moderately educated society may derive as much amusement as instruction, and *vice versâ*, as much instruction as amusement. We have been so delighted with the author's manner of describing the wonders of nature, that were we to begin to extract, we should never know when to leave off. Such being the case, we must restrict ourselves to a recapitulation of the statements made in the modest pr face, especially as it may answer the double purpose of calling attention to the present work, and to other and more important publications dependent upon it. Mr Darwin says, "I hope shortly to publish my geological observations, the first part of which will be on the Volcanic Islands of the Atlantic and Pacific Oceans, and on coral formations; and the second part will treat of South America. Several numbers of the zoology of the voyage of the 'Beagle,' due to the disinterested zeal of many of our first naturalists, have already appeared. These works could not have been undertaken, had it not been for the liberality of the Lords Commissioners of her Majesty's Treasury, who, through the representation of the Chancellor of the Exchequer, have been pleased to grant a sum of 1,000*l*. towards defraying part of the expenses of publication. I have repeated in this volume my account of the habits of some of the birds and quadrupeds of South America, as I thought such observations might interest those readers who would not probably consult the larger work. But I trust that naturalists will remember, that mere sketches are here given on several subjects, which will hereafter be more fully entered on, or have already been so:—for instance, the notices of the strange fossil quadrupeds of the eastern plains of South America are exceedingly imperfect, whilst an admirable account of them by Mr Owen, now forms the first part of the zoology of the voyage of the 'Beagle.'" The work is got up in capital style, as all Mr Colburn's works are; moreover, it is enriched with two valuable maps; one of the "Keeling or Cocos Islands, situated in the Indian Ocean, and about six hundred miles distant from the coast of Sumatra," which are lagoon islands of coral formation; and the other of the "Southern portion of South America."

THE POETRY OF THE PENTATEUCH, by the Rev. John Hobart Caunter, B.D., Incumbent Minister of St Paul's Chapel, St Marylebone; and Domestic Chaplain to the Earl of Thanet. London: E. CHURTON.—We mention this interesting work for the sole purpose of stating that we received it much too late in the month to give us a chance of doing justice to its merits. Our proximate number for November will enter fully into a review of its extraordinary contents; extraordinary, not only for the uncommon erudition exhibited throughout, but for the absolute novelty of the views entertained by the author, and for a very remarkable analysis of facts in Hebrew literature.

The Sportsman, for September. London: Rogerson.—Let the writers in this magazine take a little more care of their epithets, and not put down "*vivacious* truth," with many more such "quintessence of moonshine" adjectives; and above all, let the Editor reject with abhorrence a pun upon the death of a fellow creature. At page 185, we find, under the name of James Yarrum Claye, a most abominable attempt at pleasantry, headed "Deer-shooting extraordinary," wherein the "homicide by misadventure" of a poor wretched woman, who was shot while gathering sticks out of a wood for her fire, is made the subject of a stanza, containing, as the author very properly says, "a *villainous* pun or two." The evidence on the case in question went to prove, that a keeper who had orders to shoot trespassing deer, mistook a woman for one of them, and immediately shot her dead. Had we a keeper who did not know the difference between a deer and a woman, even in a wood, we should know what to do with him; but we really should not know what to do with a man, who, as he himself states, finding "a paragraph in the newspapers" giving an account of the horrid accident, immmediately sees room for a pun, but none for reflection. The present number of this publication is also open to another most serious objection. At page 190, in the report of the "Bloomsbury" trial, the writer states of the counsel, that "he made up by witticisms for his lack of the knowledge of the School;" and in the next page he impudently asserts that "the learned judge made some remarks, the greater part of which would have been better omitted." What does the writer imagine? Does he think that horse-racing and the turf form the *alpha* of existence, and that courts of law are bound to comprehend, and judges and barristers to understand, the ever-shifting rascalities of a race-course? Unless the *Sporting Magazine* reforms these matters altogether, it will go, where it ought to go, "to the dogs." We are no enemies to sports; on the contrary, we are enthusiasts in their pursuit; but we cannot patiently witness an attempt to bring down the dignity and wisdom of the judgment seat to a level with the bets of jockies and black-legs, without recording our unqualified dislike of such graceless impertinence. The engravings are tolerably good, with the exception of the rod and reel in that of "Perch and Chubb," between which and the perspective, half-a-dozen miles beyond, we can perceive no difference. Finally, we would recommend "Capsule," when he writes on "Boar-shooting in Brittany," to give us less of Piccadilly and more of France. His article reminds us of *sheet*-making extraordinary. The general contents of the magazine merit praise.

The Encyclopædia of Rural Sports, by D. P. Blaine. London: Longman & Co.—Sports of the field have, in all ages, "constituted a favourite amusement of large portions of mankind; and that the progress of civilization and refinement has rather strengthened than subdued the passion for these exhilarating pursuits, is sufficiently evinced by their present popularity among all ranks of society." Thus saith the author of the Encyclopædia, and in saying so we believe he says truly. The number before us is the first of ten, which will complete the book; and if the succeeding parts are fully equal to the one already published, we have no doubt that an extensive sale will reward the industry and perseverance of the author. For 5s. there are one hundred and twenty-eight pages of letter-press in a small but beautifully clear type, the whole embellished with nearly as many wood engravings of the very highest order of merit, by Branston, from drawings by Alken, T. Landseer, Dickes, and others. These wood engravings are so remarkably fine, both in design and execution, that every time we open the book we look upon them with increased satisfaction and delight. The order of arrangement adopted by the author is one deserving of commendation, securing, as it does, something better than the mere gratification of curiosity. In tracing rural sports to their origin, he has carried his researches back to the infancy of society, when man was compelled, in self-defence, to make war upon the wild animals by which he was surrounded. Descending with the stream of time, he has developed the gradual progress of improvement in the construction of implements and the adoption of plans, until both have reached their present state of comparative excellence; thus bringing down the history of rural sports to the period when those pursuits, originally embraced for purposes of personal security, were converted into a means of recreation and enjoyment.

The Acanthus.—We have been much pleased with a little publication on ornamental design, called the Acanthus, by Mr Page, of the Society's School, in Leicester

square, notwithstanding the negligent wording of the explanatory text. There is great simplicity in the principles laid down for drawing and for composition, elegance in the figures, and considerable knowledge of the subject. We, however, hope it will not be restricted to the explanation and working-up of that one of nature's beauties in all its variety, but that the same taste and judgment will be applied to the bramble, the sow-thistle, the large poppy, the artichoke, and other graceful specimens of her profuse wilderness; it will then be an important work. Although we perfectly agree with Pliny that, "throw it in whatever form you may, it is sure to fall into graceful curves," we are by no means prepared to agree with Mr Page that the Acanthus was the only favourite of the Greeks: the vine, the ivy, and the honey-suckle especially, were equally applied when the case required them, appropriate application being a main beauty in their best works. The Acanthus, however, as an introduction to nature's volume, contains an excellent index to the mode of copying nature for ornamental design.

MINIATURE PAINTING.

THE DUCHESS OF KENT.

The portrait of her Royal Highness the Duchess of Kent, by W. C. Ross, A.R.A., is an admirable likeness; ably drawn and richly and royally coloured. As a work of *Art*—the fair neck is tinted to the life, and the complexion is skilfully and harmoniously wrought up to a more glowing carnation in the smiling countenance. The right hand only of her Royal Highness is shown (the other being gloved), but it is drawn with exquisite delicacy, and the pearls and other jewellery are touched with due taste and spirit. Of the drapery, the colouring is forcible; sufficiently rich and various, and all the better for being painted on with a good firm *impasto*, and not effected by stippling. And the cool green silk mantle is in good apposition to the flesh tints; while the Duchess is very agreeably dressed, and not smothered in dress, as is getting to be somewhat too much the fashion among portrait painters.

As a work of *Truth*—the character of the countenance is abounding in graciousness and amenity, and is at the same time as completely English as if her Royal Highness had derived from a long line of British ancestry. An engraving of this beautiful portrait (published by Messrs Colnaghi and Puckle) will form a companion to the one of the Queen by the same artist and publishers.

ON VIEWING THE PORTRAITS

OF THEIR SERENE HIGHNESSES THE PRINCES OF LEININGEN, NEPHEWS OF HER MAJESTY, PAINTED, BY HER COMMAND, BY W. C. ROSS, A.R.A., FORMING A BEAUTIFUL GROUP IN MINIATURE.

I saw two lovely boys, with joyous faces,
Mingling arch merriment with childhood's graces;
One kept a begging *lap-dog* in suspense,
Holding a tempting cake above his head;
The other seemed inspired with mirth immense
To see the puppy anxious to be fed;
While a *pet parrot*, mischief in her eyes,
Laughed at the three, and bore away the prize,
Or *seemed* to do so;—for, on nearer view,
The scene was only what an artist drew,
Whose pencil can such fascination give,
Its magic children want but *voice* to *live!*

August 1839. THOMAS DIBDEN.

LEARNED SOCIETIES.

The Meteorological Society has had its objects considerably advanced by the issue of orders by the government to be followed in the various British Colonies—an extent on which the sun never sets—respecting records to be kept of the state of the weather. Some competent person is to keep the record after the manner of a ship's log-book. A column is to be specially reserved for inserting the height of the barometer. Under the head "remarks," is to be entered all meteorological observations considered worthy of particular notice. The strength of the wind, and other important information connected with the theory of the cause of storms, is especially required to be noted ; and as the object of the government is the advancement of knowledge in science generally, the governors of British Colonies are " to consider how far it may be in their power to obtain useful information bearing on the subject from countries adjoining to their governments in the possession of foreign powers, or how far it may be useful in the study of meteorology to exchange the observations made within their governments for those of countries in their neighbourhood.

The Scientific Society.—A new Association, has forwarded to us a report of their first meeting. A main object would appear to be the advancement of the science of natural history. It was announced that 360 specimens had been added to their collection since June, and that several additions had been made to the library. Committees of instruction were elected for civil engineering and architecture, geology, botany, natural history, and medical science; after which Mr Moxon read a paper on the Kauri tree of New Zealand, a gigantic species of the coniferæ, growing to a great height, and the geography of which is remarkable, as being confined to a small portion of the islands.

An earthquake, a most unusual visitor, was felt during the present month in the West of England. It was preceded by stormy and unseasonable weather, and by the appearance of the aurora borealis. The shock was not very violent, although sufficiently so to alarm the inhabitants of the neighbourhood to the highest degree. The noise is described as being like that produced by a loud subterranean explosion.

Outlines of Sculpture.—C. Murton.—We wish the execution of these " outlines," by the artist, had been as good as the intention of the publisher in producing the work. We should then have had everything to praise and nothing to condemn.

We find that the exhibition at the Derby Mechanics' Institution has just closed, and we are informed on authority that the number of visitors amounted to 95,000 persons. At first the charge was 6d. for admission, but it was reduced to 3d. The profits amount to 2,000*l.*, exceeding by 400*l.*, the building debt of the Institution. The results appear, in every sense, to be most satisfactory. In all probability the principal portion of the 2,000*l.* thus expended on instructive amusement would have gone to the public-house but for this opportunity of rational excitement.

Mr Joseph Strutt, of Derby, is about to give a further proof of the interest he takes in the welfare of the townsfolks of Derby—we might say of mankind. He has entrusted to Mr Loudon, the celebrated author on gardening, the planting and arrangement of eleven acres of ground, which, when complete, are to be given to the public for the recreation of the increasing population of that industrious town. We hope such an example of generosity will meet with imitators.

Pocket Diary. Gratuitously distributed by the National Endowment and Assurance Society.—When we first took up this *brochure* we looked upon it with suspicion as a clever advertisement. On further examination we are bound to acknowledge that there are some remarks worthy the attention of the fathers of families, as well as of the philanthropist ; witness the ' Plan for gradually lowering the Poor Laws.'

We are much pleased to find that the Duke of Sutherland, on his return from the continent, has given a strong proof that he still can take delight in the productions of British genius, and the choice he has made of a subject—the assuaging of the waters after the Deluge, to be painted by Martin—convinces us that his taste has not been spoiled by travel. We recollect a drawing of this subject, by the painter of 'Belshazzar's Feast,' in the Exhibition of the New Water-colour Society,—certainly one of his happiest compositions. If the same simplicity and comprehension of the subject is preserved in the picture on a large scale, with that effect of space for which Martin is pre-eminent, this order will confer much honour on the noble patron, and increase the well-earned fame of the artist. We hope that his energies will not slumber, or his ambition fail, as in some cases we have known with other artists in case of an *order*.

THE

POLYTECHNIC JOURNAL.

A Magazine of Art and Science.

"Felix qui potuit rerum cognoscere causas."—VIRG.

UNNECESSARY EVILS AND ANNOYANCES IN RAILROAD TRAVELLING:

SOMETIMES RIDICULOUS TO RELATE, BUT ALWAYS SERIOUS TO BE FELT.

THE immense advantages derived from the invention of railroads, and the extensive nature of their benefits to the community—benefits increasing with every year, and beyond calculation in their ultimate results—are so apparent, that we think it can hardly be requisite to premise that we would not for an instant object to any portion of their utility on account of the numerous evils and annoyances for which they are at present conspicuous. On the contrary, their value and importance render it the more necessary that the public should derive the full benefits of their large capacity for good, without the alloy of those vexatious discrepancies, for which they are now becoming extensively notorious with a rapidity equal to their locomotive power.

Inasmuch, therefore, as it is the duty no less than the interest of those Directors and Shareholders who have invested such enormous capital in these railroads, to take every possible means of rendering them an unalloyed benefit to the community,—so, we can never believe that they are thoroughly aware of the facts now known by general experience, which militate grievously against this benefit. For the advantage, therefore, of the public, through the medium of the undoubted interest of the Directors and Shareholders, we shall proceed to lay before these gentlemen a few memoranda collected during various railroad trips and journeys, not doubting but they will see the immediate necessity of correcting the manifest and unnecessary evils.

I. ANNOYANCE IN GETTING TICKETS.—Many blanks have to be filled up in the tickets while the public are crowding round to obtain them. Surely *all* this formality of scribbling is not necessary? Why not have all the tickets for the day ready for delivery, or in some condition of readiness so as to require as little writing and delay as possible? The method of herding and driving passengers is also unbecoming, offensive, and not necessary. There is generally a passage between the counter on one side and the rails

on the other, and passengers have to huddle through like going into the pit of a theatre on a crowded night. The passengers are squeezed. It is impossible to carry much luggage through this narrow pass; and if you set it down behind you in the waiting-room for the porters, it may be lost; or if you personally give it to a porter, you do not know whereabouts he may deposit it, which will be most particularly awkward if you have to leave at any other station than the farthest end of the line. In the Croydon railway this nuisance is remedied. The tickets are all ready beforehand, and are obtained at a counter remote from the passage to the carriages; so that at this railroad terminus there is no squeezing of a helpless and humiliated public.

II. Misleading Travellers.—The trains from Croydon, at the opening of the railway, started at twenty minutes past eight, and twenty minutes past nine. This was soon altered to ten minutes past eight, and ten minutes past nine; yet in the sixpenny guide-books sold by the Railway servants, within the enclosure, to which there is access to those only who have paid for tickets, there was, for weeks after, a table showing the hours of starting, in which the previous statement was not corrected: and this, too, although on a leaf at the end of this *guide* there was a promise that a new edition would be issued whenever there was an alteration of the time or of the fares! This was the more conspicuous as all the rest of the leaf was blank. Furthermore, placards with the erroneous statement continued, for several weeks after, in the windows of tradesmen at Croydon. Of course a person trusting to this information from the fountain-head would come too late for these two trains. But it was of no consequence; the Company lost no money, as the traveller must still go by the next train, and it was too much trouble for the clerks to lift a pen to correct the books or placards. They feel no inducement to take this trouble unless they can keep somebody waiting meantime. The expense of new placards is a small and ridiculous matter, and it is strange that they should not always be re-printed and exhibited. Servants should also go round to the different shops with fresh placards, or corrective patches and means of blotting out the errors promulgated "on the best authority."

III. Denial of Information.—A traveller, having in view a journey to the west of England, sent his servant to the station at Vauxhall to inquire what coaches ran from the Railway at Basingstoke. The reply was simply and drily, that "they knew nothing about the coaches!" He decided to go by Southampton, and went down to Basingstoke. There was only one stage-coach, and in that the places had all been taken at London. He had adopted the obvious method of getting information, but had not obtained it. He joined with a friend, and at a considerably increased expense went by a post-chaise to Winchester, where he had to wait two hours for the train to Southampton. He may know all about it now, as well as the clerks who refused to communicate; but it is too late. How easy would it be for the clerk at each station to make a list of all coaches which run from such station, the hours at which they run, and the trains which arrive at that time. There are plenty of idle

hours for him. And should it not be expressly a part of his business? Have not the public a right to obtain all such reasonable information? The clerk's hours are long, but there is little to do in the interval between the trains. Such a list for each station might be hung up on the station-house at Vauxhall, and then the public could get some better information than that "They know nothing about the coaches!" This will equally apply to other lines.

IV. The Insolence of Office.—As everybody has by this time experienced the rudeness, causticity, and attempt at distant *hauteur* of the clerks; the dictatorial and "apprehending" style of the policemen (pardonable only, and then commendable, in the presence or prospect of danger), with the off-hand seizures and vulgarity of the porters; it is not necessary to do more than allude to the fact thus publicly. We are quite sure that the Directors and Shareholders, once aware of its real extent, will never permit its continuance. The least excusable of all are the clerks, because in the performance of their duty there can be no attendant dangers whatever, and no sudden claims upon the energies of action to qualify their abrupt and unprovoked rudeness. Their behaviour is a perfect specimen of the effect of authority upon vulgar minds. Many young men thus circumstanced conduct themselves towards those who apply for tickets with a cold autocratic air; while to those unfortunates who come in the innocence of their hearts to ask information of the great man with the pen, he scarcely ever gives a civil reply of any kind, and even in his dry retort—which is generally to the effect that he does not know, and that they should use their eyes—he seldom deigns to look at the person addressing him. We once took occasion to mention this continual and unprovoked insolence, in conversing with one of the Directors. "Insolent!" exclaimed he; "the clerks insolent! God bless my soul, you don't say so! Surely you must have been irritable, or in some way or other have transgressed our laws? I am up and down continually, and I never experienced anything but the very greatest respect and attention from all the officers and servants of our Company!"

V. Want of Accommodation for Persons waiting the Arrival of their Friends.—At most of the stations of the railways there is no accommodation whatever. Those who are waiting for their friends, or for valuable packages, must stand outside, exposed to all states of the weather. There is no permission to get within the gates, and no shelter provided outside. A wife or sister coming by a train can get no assistance from husband or brother to look after her luggage, or get for her a conveyance. Soon after the Southampton Railway was opened a husband was absolutely taken into custody and brought before the magistrates for getting into the forbidden enclosure to look for his wife, who was coming by the train. Husband, brother, or lover, all must stand poking anxious noses through the bars. This is the best chance they can obtain anywhere, and at the Croydon station there is a division of the yard where friends are graciously permitted to stand and look through the enclosure to see when their friends arrive, to whom they may also call out, and with whom they may even shake

hands through the bars. If no other means of preventing impertinent intrusion can be discovered (and of course it never will if no wish for such discovery exist) there should at least be some sort of shed outside, however humble, to protect those who really *have* business there from the inclemency of the weather, and who ought not, being the large majority, to be made to suffer for the possible advent of impertinent intruders.

VI. Want of Coaches at the Stations.—The railways have, on many lines, worked the coaches off the roads. You must travel to the nearest station, and go thence to the town which you desire to reach, by one of the branch coaches, some of which come from a great distance. But you can have no security of getting one: perhaps you must wait three, four, or more hours. Again: if you arrive at the hour when the branch coach starts, it may be full; you may have to wait twenty-four hours for another chance; and, if it be Saturday night, there may be no chance for you until Monday. You seldom can take a place from London, or, if such a thing can be managed by the "knowing ones," it is scarcely possible for the stranger to find out how he is to do the same, because, as before stated, the people at the railway-offices will give no information on the subject. Absorbed in profound contemplation of one particular *train* of unvarying thought, with all its concomitant perplexities of filling up the blanks in tickets, they cannot descend from their concentrated abstractions to attend to any further details.

VII. A Railway Journey is often Three Journeys.—We are not about to include this circumstance in the list of unnecessary evils and annoyances to which the traveller by railroads is at present subject. We merely mention the fact that the Directors and Shareholders may perceive that sufficient inconveniences occur of themselves, without being enhanced by imperfect arrangements, and the misconduct of officers and servants. If you live in the City and would go down by the railroad, there is a metropolitan journey to Vauxhall or Euston square, or to the station of the Great Western, which is nearly a mile farther off than the Yorkshire Stingo. This is a journey of itself to begin with; then there is the railway journey; and possibly you are set down a mile or upwards from the town which you desire to reach. The Harrow and Watford stations are instances of this; one being upwards of a mile distant, the other nearly a mile. The Tring station is a mile and a quarter from the town; the station nearest to Northampton is some miles distant. More or less, this is the case on all the roads. Hence there is a third journey before getting to the inn, and three times to look after the luggage. The loss of time is considerable, and the exhaustion proportioned to the want of refreshment, unless you encumber yourself with provisions.

VIII. Want of Refreshments.—At Reading, in order to get to London on Monday morning by the first train, you rise at six o'clock, leave fifteen minutes before seven, arrive at Twyford fifteen or twenty minutes before eight; you wait for the train getting ready, get to Paddington at half-past nine, and reach home by ten or after. It is scarcely possible to get breakfast at the inn at Reading

so early, and it would be very hard upon the servants to force them to get up (even if you could) at five in the morning for so small a matter of remuneration. Besides, you are not hungry so early. But at Twyford, after a ride of sundry miles, you could take a cup of coffee or tea, and eat a few slices, but nobody is allowed to sell you any sort of refreshment. In like manner, at Guildford, you get up early, ride five miles to Woking, wait for the train, and proceed to Vauxhall: possibly, and indeed very often, the omnibuses are full; you must take a cab, or get home how you can, sick to death for want of some trifling refreshment. If the Directors would only allow a policeman's wife to make tea and coffee, and sell it to the passengers who are waiting for the train, they would willingly pay her a good price for it, and she would make a better living than her husband, and do much for public comfort, and no harm to anybody. Again: suppose you leave town too early for your usual dinner (and cannot force yourself to eat for the sake of laying-in a stock against hunger), and are either indisposed to burden yourself with provisions—or you forget to provide them—or dislike to take things which you will have to eat in presence of the hungry eyes of your fellow-passengers—discomfort, and perhaps faintness and pain, are pretty sure to supervene, by the time you are thirty or forty miles on the road. You can get nothing. The train may stop five minutes at a station, but nobody is permitted to hand you a glass of ale and a biscuit, even if such things were in readiness. The discomfort is not a necessary evil. There need be no delays in this matter where the train stops five minutes, and it is sheer perversity to attempt getting up a list of difficulties against so obviously easy a proceeding. Let twopenny packets of biscuits or sandwiches be in readiness, with ale and a score or two of half-pint pots, and *no change* to be given; then the fault of no refreshment, at natural intervals, would rest with those who forget to furnish themselves with halfpence or fourpenny-pieces, and who did not choose to spend sixpence or a shilling in consequence of their own remissness. As it is, there is no relief for you. English habits are all against this forced abstinence. We have been too long accustomed to the means of getting something during the five minutes employed by the long stages in changing horses, not to feel this new law of no-refreshment as a very great annoyance. To those who are weak, or in bad health, it is a serious consideration; it is some consideration to everybody. When the Southampton Railway to Woking was first opened, the Directors had a most capital dinner to celebrate the occasion, during which the steam was got up with Champagne, and chine and turkeys added considerably to the luggage of the returning convivialists. Happening to read a most exhilarating account of this in the newspapers, we imprudently fancied that Woking was a place where something eatable and a bed, if desired, might be had for money. We went down, intending to remain from Saturday afternoon till Monday morning. On arriving, we found the place was a dreary common. Five or six passengers on alighting started off to amuse themselves, as it appeared, with a race on the common, to stretch their legs and expand their animal gas. We

soon afterwards heard that there was a public-house at a village about a mile off, indicated by a steeple over the trees, and we then understood the occasion of the race on the common, which was evidently to secure all the beds. By persevering in our inquiries we next ascertained the locality of the village of Woking, which was two miles distant. We trudged off accordingly. There also the beds were all engaged by the officers of the station. We had therefore to retrace the two miles back to the station. As to refreshment here, we might just as well have been set upon an iceberg in the North Pole. We were obliged to proceed to Kingston, which is miles distant. It was a pretty trip of pleasure, truly, all this! It is a fact that several tents had been pitched by humane and intelligent speculators in victuals; but such is the antipathy of the Directors to other people eating and drinking, that all these tented comforters of the public had been driven away by a threat to lay information. Of course we were by this time half-starved. Persevering in an inquiry of one of the clerks as to where one could get a scrap of anything to eat, he at length replied, without lifting his eyes from the paper whereon he was writing, that "bricks were laid down to build an inn!"

IX. Hardships of Railway Service.—The servants of the railways are worked so many hours, and under such circumstances, that they are much to be pitied, and their ill-humour, in some cases, is pardonable accordingly. They come early, and remain late; and even on Sundays there is little relief for them. With those solitary policemen who have to walk along the line of the road, the life is monotonous and wearisome to the last degree, owing to the length of time at a stretch which this duty is required of them. The hostility of the Directors, or their agents, to eating, is equally displayed towards their servants. If a policeman were seen tasting a morsel of anything he would be discharged. If his wife were to bring him a surreptitious cup of tea and a slice of bread and butter he dare not take it, except at extreme hazard of "the condign!" An adventurous policeman, who was turned away for this crime (but is now on the Croydon Railway), was accustomed now and then to run the risk, and he has at times kept his bread and butter secreted an hour and a half before he could find an opportunity slily to pop it into his mouth. But the villain was detected at last, and immediately discharged. The Company always keep a week's salary in hand, out of which they levy all the fines, and this policeman was fined a day's pay according to the law against his misdemeanour. We would submit it to the Directors and their agents, that the hard treatment of their servants in this respect is one cause of their frequent ill-behaviour. They are made morose by hunger. This is not necessary. They should be relieved at less protracted intervals.

X. Danger to the Luggage.—Many persons have lost their luggage in railway travelling, and it is at all times in hazard. Where it is only a moderate-sized carpet-bag, an individual may carry it himself, and place it under the seat of his carriage; but if his luggage be the usual quantity required for a long journey, it is taken away and

deposited out of sight of the traveller among a miscellaneous heap. It would be very easy to affix a card to the luggage with a mere number on it, and give a corresponding ticket to the passenger, to be produced when he took his luggage away. By this means every body would be sure of his own, and no false claims could be made. This is done in the Belgian railways, and it is the common practice in public places in England. But by the present arrangement the luggage is liable to be claimed and carried off by persons leaving at the stations along the line, or even by accident or design at the end of the journey. Such things have occurred, and when important papers are lost (bonnets, caps, trinkets, no matter what) the annoyance is excessive. Surely this danger might be remedied at once with ease.

XI. Danger of the Open Carriages.—The open carriages, when the wind does not bring the hot ashes into your face, are very pleasant on a warm day; but in cold, wet, or windy weather, and throughout the whole of the winter season, they are dreadful. This is chiefly owing to the bleak and cutting drafts which howl and whistle through them. The discomfort—to use the most moderate expression—is felt at its utmost by those who sit with their faces towards the engine. Why are not all the carriages made in a way to protect the public from the wind and rain? We are afraid we must assign the cause—until a better reason be given, to the not very generous purpose of compelling all passengers who can afford it, or whose health renders it imperative, to travel in the more expensive carriages. The plan is successful, but is effected by perilling and often materially injuring the health of all those of delicate constitution, or already invalids, who cannot afford to pay (though sometimes they are compelled, when there are none of the third class) for the first and second-class carriages, to the filling of which they are consequently made the sacrifices. Even the stronger passengers are made uncomfortable, and continually catch dangerous colds from the drafts rushing through the open carriages. Now, if this be done from the motives suggested, we can only say that it is bad policy. We beg to call the attention of the Directors to the fact that this bad policy limits the extent of railway travelling in a very great degree. Nobody of humble means will travel in bad weather by the railroads, except from necessity. The numerical amount of travellers is circumscribed by this compulsory expense, just as in the case of letters by the general post; and the effects of the reduction of the duty will furnish a good test of the expediency of the change proposed to the Directors. At present the Companies lose by their policy in the long run. There is no objection to one class of carriages being made as much more luxurious and splendid than the rest as possible, but all of them ought to be so constructed as not to injure health or endanger life.

XII. Railway Board Legislation.—The Railway Acts almost always contain a clause giving power to the Directors to make rules and regulations for their servants—and the public. Penalties are fixed for the enforcement of these rules, not exceeding five pounds. This may be all very good and practical legislation as regards the officers and servants of the Company, and the means of levying the

fines are already in the hands of the authorities in the shape of a week's arrear of wages, or more, as it may happen. But how the fines are to be obtained from the offending public we do not so clearly perceive. The Directors of the Great Western institute a law, that if any individual travel on their railway without purchasing a ticket, he may be fined five pounds. In other words, the individual who attempts to get his passage without paying the fare, shall be punished by having to pay five pounds instead. This seems rather dictatorial, and certainly very amusing; but is it fair to the vast majority of the public who honestly "pay their way?" Suppose you lose your ticket!—this has often occurred with people who very honestly paid for it, and often must occur. What is the consequence? The Company may accuse you of the violation of this law, and demand five pounds. How are they to distinguish between the man who has lost his ticket, and the man who never had one?

"It is most material," says the 'Spectator,' October 5th, "that these gigantic companies should not establish monopolies and impose their own terms on the travelling public in virtue of privileges intended for the general advantage. On this point the Committee of the House of Commons observe, in their Second Report (ordered to be printed August 9th, 1839):—

"It will be found to be the opinion of some of the witnesses, that the interests of the Railway Companies and of the public can never be at variance; and that the managers of these great establishments, acting with an enlightened view of their own interests, will always have a due regard to the general advantage of the community. A more strict investigation has, however, shown that this assumption is not without exceptions: a main object which the directors of a company must have in view, is to obtain a good return for the capital expended—while it is the primary interest of the public that the intercourse should be regularly maintained with the greatest safety, speed, and economy. To a certain extent it is undoubtedly for the advantage of the company to satisfy the wishes and supply the wants of the community, especially on those lines where other means of communication yet exist and maintain a competition, although feeble, against these powerful establishments. But cases have already arisen in which *the interests of private companies and of the public have been found to be opposed to each other;* and it appears probable that, in proportion as this new system shall supersede other modes of travelling, other inconvenient consequences will ensue, unless some authority be established to watch over and protect the interests of the public. The fear of a rival line may, in some instances, be a check upon the conduct of a company; *but there are few districts in which the public will have any opportunity of selection,* and obvious and serious difficulties must arise in carrying this means of control into execution."

"The Leeds and Selby Company raised their fares: the number of passengers within a certain period fell off to the extent of 12,000, but the profit of the company was increased by 1,300*l.* The same result followed increase of fares and diminution of passengers on the Manchester and Bolton and the Dundee and Newtyle Railways."

This may be all perfectly true; but what an erroneous, narrow-minded, and mere temporary view of their own ultimate interests! For of what value to these enormous concerns can be the increase of 1,300*l.* "within a certain period," say a month or two, when compared with the probable increase, in most cases, of fifty or sixty thousand passengers within a similar space of time—a number not too large to anticipate as the not very protracted consequence of a trifling reduction, instead of a rise in the fares?

"The Committee found," continues the 'Spectator,' "that as respects the carriage of heavy merchandise and of parcels, checks ought to be put on the exactions of the Railway Companies; but the *manner how* puzzled them. Indeed, on almost every important point they are at a loss what to recommend—

"Until the great lines of communication between distant parts of the country shall be more generally completed, and the public wants and demands for the conveyance of goods and parcels more extensively known, it will be difficult to decide in what way the interests of the public can be best protected, under the practical monopoly which will be then established."

"The use of common termini, and of portions of the same line by different Companies, the Committee cannot sanction; though Parliament has permitted it, especially in the cases of the Greenwich, Croydon, Brighton, and Dover Companies. Schemes for *obviating dangerous collisions* are alluded to; but the Committee 'do not feel it to be within their province to express any opinion' as to their feasibility or propriety."

It is a very great pity that a *competent* Committee was not formed. Had this been the case they would undoubtedly have known its "feasibility and propriety," and consequently entertaining a strong opinion on the matter, would have felt it came within their province to express it.

"Against the powerful combination of Railway Companies," says the paper above quoted, "the disunited and casual efforts of the public would avail little; and, therefore, the Committee suggest the appointment by Parliament of a Superintending Board, of which the President and Vice-President of the Board of Trade should be members, assisted by one or two engineer officers of rank and experience. But the powers of this Board would not be very extensive." They are to be chiefly exercised in remonstrating with the Companies concerning which complaints are made, and suggesting the mode of their self-reformation; but if this prove unavailing, the Board "might be empowered," says the Report, "to take legal proceedings at the public expense." Something, we presume, will eventually come of this, though the proposed legislative interference is very mild, and manifests little inherent strength at present.

"The Committee," concludes the 'Spectator,' "cannot venture to propose the establishment of such a Board as they describe, until the subject shall have undergone further examination; but they are satisfied that some superintending authority is needed for 'the purpose of protecting the weak against the strong, and counteracting the evils incident to monopoly.'

"Such are the leading points of the Report; the tenour of which, we doubt not, accords with the opinion of the public generally. There is a growing impression that these gigantic companies are disposed to abuse their powers and require the control of superior authority. Redress for neglect and positive injury from them is almost hopeless. Under the old rules of the road, a person had the choice of different conveyances: if ill-used by the 'Wonder,' he could travel from London to Birmingham by the 'Tally-ho.' Now he must take the railway, or submit to great inconvenience. It has happened within the last fortnight that a parcel sent from our own office one afternoon, and which ought to have been delivered in Liverpool, by the Birmingham and Liverpool Railway, the next morning, according to the undertaking of the Company's officers at the Golden cross receiving-house, did not reach its destination till the day after—very much to the annoyance of the parties interested. But what cared the mammoth company for that? have they not a monopoly?

"We are satisfied that public opinion will sanction strong measures by Parliament for the security of society against the abuse of privileges conferred by imprudent legislation. Parliament is bound to see 'ne quid detrimenti respublica capiat.'"

XIII. Minor Nuisances.—There is not enough assistance to be obtained from the servants of Companies at the different termini (this is particularly the case at Euston square), and as they will not allow your own servant to enter, you are compelled either to be your own porter, or to wait an indefinite period for the authorised assistance. We would also ask two questions with reference to the chemical and mechanical departments. First, is the dreadful stench of apparently a horrible compound of foul steam and rancid fried fat absolutely necessary to salute the noses of passengers at the different stations along the line, when the wind blows in their faces? Also, we would ask whether the roofs of the carriages are not often too low for tall people; and whether the shape of the roof, being almost always rather curved, might not be more agreeably contrived in respect of rainy days? In consequence of this curve, there is a little hollow, or ditch, into which the rain runs. This little ditch, it is true, prevents the rain from dripping down, or being forced by the wind into the faces of the open-carriage sufferers; but whenever the road becomes a trifle uneven, and there is a depression of the rail on either side, the carriage of course leans to that side, and down leaps the accumulated water over the edges of the little ditch on the roof, and you are thus liable, if not on your guard, to be drenched to the skin. Surely this water might be carried off by a spout, or made to escape by some secret pipe, unseen and unfelt?

XIV. Roads not enclosed.—The roads are well enclosed by high brick walls near the station-houses. This is good policy, inasmuch as it affords ample opportunity to see any one who might attempt to get on or off the road, except by the regular ingress where money is paid, and egress where his ticket is taken from him. This secures the money. But in all other parts there is no difficulty, and any child may get upon the road. Cattle often get over the frail enclosures, and lie down in the road. Three cows were killed by a train on the Leeds and Selby Railroad. Swine are sometimes killed, so are horses. Now, the worst of this is, that the trains themselves, and all they carry, are endangered. Where 70,000*l.* per mile is spent—which is sometimes the case—a little outlay to keep off children, cows, swine, and horses, would be both wise and humane.*

XV. Loss of Life.—We have reserved this part of the subject for the last, because it is by far the most important, and we wish it to remain as a strong final impression. The list of killed and wounded on the railways is much larger in its amount than the public suspect. When trains or single carriages are overturned, the passengers suffer, more or less, of which various instances have occurred, and in these cases the accident becomes generally known.

* In the early part of last month, since writing the above, two cows got upon the London and Birmingham Railway, and lay down in the road. The mail train dashed over them, and killed them both. By good fortune nobody else was killed; but the shock shattered the mail, and the letters were all so mixed and confused that it was requisite to send them back to London to be re-issued.

But the great majority of accidents are those which befal the servants of the Companies, and these are not so generally known. The public, moreover, are rather apathetic on this point, as though the death or mutilation of the Company's servants was not of much consequence, or, if so, at all events they were paid for it! The lives of these men are as precious to their families as those of any other class in the community. Their liabilities to accidents are certainly very great. While we are writing (September 15th) we hear of a frightful accident which has just occurred on the London and Birmingham Railway. "Inspector Watts, stationed at Woolverton, on the above line, was crossing the road at the time the first train from London came up, when, before he could get out of the way, he was knocked down, and, falling under the engine, that and the whole of the carriages passed over him, whereby he was literally cut in two, both legs being separated from the trunk. His head was also frightfully shattered, and no doubt death was instantaneous. The deceased was formerly serjeant in the Metropolitan Police force, and had only recently obtained the situation of inspector in the Company's service. He was about thirty-three years of age, bore an excellent character, and has left a widow and family to deplore his horrible fate." This is sufficiently dreadful; but of course the same thing might happen to anybody. Even one of the Directors might be cut in two. In this latter case we might hope for a more speedy recognition of the imminent dangers to which the public are liable. We trust these evils will be rendered much less frequent, and that the Directors will perceive it is best that the correction, as far as possible, should at once proceed from themselves, before the interference of Government, in which case a heavy deodand upon every life thus sacrificed will probably be the mode adopted for the better security against these horrible accidents.

No Life Insurance Company in London would have anything to do with a railway engineer, stoker, guard, policeman, or porter. When an accident (and it is to be recollected that almost all railroad accidents are attended with loss of life) happens to any one of these individuals, or, indeed, to any one else, it is commonly accounted for by the charge of gross neglectfulness among the engineers or other servants, and imprudence in all cases. This is not the true view of the matter. Where individuals have their own limbs and lives at stake, as well as those of other people, it is mere mental indolence to attribute their death or mutilation in all cases to gross neglect and unparalleled remissness in the performance of their duties. The servants of the railroads are not more neglectful or remiss in this respect (probably less) than any other class of individuals. It is the peculiarity of their circumstances, where a trifling neglect or momentary remissness is almost instantaneously followed by fatal consequences. The same may be said of those unfortunate individuals, not connected with the railways, who are killed. It is not that they are less prudent than other people, or more imprudent on the railways than in other places. It is that they are overtaken by sudden death, while there is no visible danger. Or, if the danger become suddenly visible, the individual either makes no doubt but

he has abundance of time just to step across out of the way of a thing at present so far off; or else, he stands paralized with apprehension, and not instinctively darting backwards or forwards at once, is killed in his state of frantic indecision. The fact is simply, that we are not accustomed to such rapid ideas of time, and the rapid locomotion of ponderous bodies. We have been taught by all the habits of our lives to expect very much slower movements of mighty masses. We do not feel the fact till it is upon us. We cannot yet (except in calm reflection, and not in the presence or proximity of danger), feel and believe that a thousand ton weight can reach us with the celerity of a two-ounce arrow. We cannot be convinced that a long black slug moving on a narrow little smoky path three miles off, should come upon us in a moment like a demon, homeward-bound, and unconsciously exterminate us in its tremendous passage. The public will be long in learning to identify this terrific abstraction of the compromise of time, place, and ponderosity, with the deadly fact of its corporal consequences. It is not true to the eye, nor to any of the other external senses, until *proved*. All the habits and feelings of the public are as yet unaccustomed to it, but accustomed by all experience from childhood to a different calculation. The public should be taken care of accordingly. Great care, we know, is already taken by the Directors, but it is not sufficient. This care, so manifestly bestowed in the vicinity of the stations, should be extended all along the lines by better enclosures, and by policemen at less distant intervals. If Government were to pass an Act ordering that the wives and orphans of the servants of the Company, and of all poor people killed on the railroads, were to receive a pension from the railway where it occurred, the justice and humanity of the measure would be as conspicuous as the wisdom, for it would certainly tend to lessen the amount of deaths by increasing the care of the Companies in prevention. It could not be liable to much abuse, as few men would get killed in order to secure a pension for their families. If suicide could be proved, of course they would not obtain it. Were Government to order a return of the list of deaths by railways, we think the amount would produce some sensation. We should rejoice, however, to see all these necessary improvements instituted by the Directors themselves, and we hope they will not suffer that increased care and consideration which is due to the public to be first manifested by the Board of Guardians, and the three Somerset-House authorities.

We are assured that the Directors and Shareholders will perceive that the foregoing remarks and suggestions are made in no spirit of uncordiality and no captious feeling whatever. They originate solely in the fact of the existence of various unnecessary evils and annoyances (of many of which we cannot suppose the Directors are sufficiently aware), and that while we are fully impressed with the immense and prospectively increasing advantage of railway conveyances, we are equally convinced that it is for the best interests of the Companies to assimilate and identify their efforts with the best interests of the community.

R. H. Horne.

ILLUSTRATED PAPERS ON WOOD ENGRAVING.

NO. I.—THE HISTORY OF THE ART.

In commencing a series of Illustrated Papers on the Art of Engraving on Wood, we have been influenced by several motives, and encouraged to the task by a variety of fortuitous circumstances. Although the least pretending of the various methods of engraving, it is the one whose history is most interesting, as allied to the early practice of printing. Its mechanical execution is the most rapid and easy, and its application most extensive. Being capable of introduction into the pages of printed books, on the same surface and surrounded by the type, it is peculiarly adapted to the illustration of familiar topics. The cheapness with which impressions are multiplied, owing to the durability of the engraved block, is another recommendation in its favour; and when to these advantages is added its power under the hands of a skilful artist of producing an effect in many respects equal, and in some even superior, to engraving on metal, it cannot be a source of surprise that wood engraving should have become one of the most flourishing and valuable of modern arts. Of the circumstances that have encouraged us to commence this series of papers, by no means the least influential, is the recent publication of Mr Jackson's *Treatise on Wood Engraving*, a work which will form the basis of a portion of our papers. The literary merits of Mr Jackson's volume will become the subject of some subsequent consideration, but we must here stay to remark that for curious research and beauty of practical illustration, it stands unique. From its stores of information upon our subject, we shall draw largely, and in proceeding with the early history of wood engraving—replete in itself with interest to the scholar and the artist—we shall further trespass on Mr Jackson for a few *fac-similes* of the earliest wood engravings.

Before entering into the details of engraving on wood, it will not be superfluous, perhaps, to say a few words explanatory of the difference between engraving on metal as distinguished from engraving on wood. The impressions from *plates* of the one or *blocks* of the other, are usually termed engravings, although the term "plates" would be more properly confined to impressions from metal, and "cuts" to impressions from wood. But independent of the difference of material, there is a grand distinction between the two processes;—the engraver on metal corrodes with an acid, or removes with a graver from the surface of the plate, the lines which are to produce the shadows of the picture; the wood engraver cuts away the portions which in the impression are to be white, leaving prominent the parts from which the ink is to be taken. In printing from a plate, the ink is rubbed into the incisions made by the graver, and the surface of the plate is cleaned; after which the paper is placed upon it, and by the action of a roller press, is driven as it were into the incisions, from which it takes the ink, and thus the impression is obtained. In inking a wood block, the opposite course is pursued. The ink is applied to the prominent surface, instead of being driven

into the incisions, and the paper being pressed upon the raised surface, receives the impression from it, the incisions forming the lights. An outline is here given to illustrate this. The figure of the youth is in outline—which outline is imprinted on the paper by the portions of the block which *remained untouched by the graver*. The whites, or light portions between the lines that form the figure, represent the parts of the wood block which have been cut away; they are lowered sufficiently under the rest to prevent the ink, when applied to the work, from touching any portion but that forming the picture.

The wood used for engraving is box. Other woods have been tried, but none answer the purpose equally well, unless for large coarse blocks, when pear-tree is sometimes resorted to. Of box there are numerous qualities; some from Turkey, some from America, some of native growth. This last is, however, generally found to be best, and would altogether supersede the foreign article if it could be obtained sufficiently large. The Turkey box is frequently spoiled by the slovenly manner in which it is felled.

If inclined to enter into the dim and misty regions of the earliest antiquity, it would not be difficult to bring forward evidences of the practice of impressing characters by means of stamps, at as early a period as the days of the prosperity of Babylon. Such an inquiry would, however, be rather ingenious than interesting or useful; and we therefore prefer commencing when the evidences become more decided and the facts more important or amusing. The first engravers on wood of whom we have any account are Alexander Alberic Cunio and his twin sister Isabella. Of these early followers of the art there is an account in Papillon's 'Traité de la Gravure en Bois,'

mentioned in Ottley's 'History of Engraving,' and translated in Mr Jackson's book. It savours somewhat of romance, but may be worth extracting.

"The Count de Cunio, father of the twins, was married to their mother, a noble maiden of Verona and a relation of Pope Honorius IV, without the knowledge of their parents, who, on discovering what had happened, caused the marriage to be annulled, and the priest by whom it was celebrated to be banished. The divorced wife, dreading the anger of her own father, sought an asylum with one of her aunts, under whose roof she was brought to bed of twins. Though the elder Cunio had compelled his son to espouse another wife, he yet allowed him to educate the twins, who were most affectionately received and cherished by their father's new wife. The children made astonishing progress in the sciences, more especially the girl Isabella, who at thirteen years of age was regarded as a prodigy; for she understood, and wrote with correctness, the Latin language; she composed excellent verses, understood geometry, was acquainted with music, could play on several instruments, and had begun to design and to paint with correctness, taste, and delicacy. Her brother Alberic, of a beauty as ravishing as his sister's, and one of the most charming youths in Italy, at the age of fourteen could manage the great horse, and understood the practice of arms and all other exercises befitting a young man of quality. He also understood Latin, and could paint well.

"The troubles in Italy having caused the Count Cunio to take up arms, his son, young Alexander Alberic, accompanied him to the field to make his first campaign. Though not more than fourteen years old, he was entrusted with the command of a squadron of twenty-five horse, with which, as his first essay in war, he attacked and put to flight near two hundred of the enemy. His courage having carried him too far, he was surrounded by the fugitives, from whom, however, he fought himself clear without any further injury than a wound in his left arm. His father, who had hastened to his succour, found him returning with the enemy's banner, which he had wrapped about his wound. Delighted at the valour displayed by his son, the Count Cunio knighted him on the spot. The young man then asked permission to visit his mother, which was readily granted by the Count, who was pleased to have this opportunity of testifying the love and esteem he still retained towards that noble and afflicted lady, who continued to reside with her aunt; of which he certainly would have given her more convincing proofs, now that his father was dead, by re-establishing their marriage and publicly espousing her, if he had not been in duty bound to cherish the wife whom he had been compelled to marry, and who had now borne him a large family. After Alexander Alberic had visited his mother, he returned home, and shortly after began, together with his sister Isabella, to design and work upon the pictures of the achievements of Alexander. He then made a second campaign with his father, after which he continued to employ himself on the pictures in conjunction with Isabella, who attempted to reduce them and engrave them on wood. After the engravings were finished, and copies had

been printed and given to Pope Honorius, and their relations and friends, Alexander Alberic proceeded again to join the army, accompanied by Pandulphio, a young nobleman, who was in love with the charming Isabella. This was his last campaign, for he was killed in the presence of his friend, who was dangerously wounded in defending him. He was slain when not more than nineteen; and his sister was so affected by his death that she resolved never to marry, and died when she was scarcely twenty. The death of this lovely and learned young lady was followed by that of her lover, who had fondly hoped that she would make him happy. The mother of those amiable twins was not long in following them to the grave, being unable to survive the loss of her children. The Countess de Cunio took seriously ill at the loss of Isabella, but fortunately recovered; and it was only the Count's grandeur of soul that saved him from falling sick also."

These engravings, said to have been presented to the Pope in 1286, present many points which give rise to doubts of the truth of the story; and Mr Jackson takes some trouble to show that Papillon, the authority upon which the story rests, was, if not deranged, at least excessively credulous.

The manufacture of playing cards appears to have first introduced wood-blocks into extensive use, but the earliest engraving at present in existence is in the possession of Earl Spencer, and bears date 1423. It is known as the St Christopher. It represents the Saint crossing a stream, guided by the light of a hermit's lanthorn. The background has a mill, with the miller carrying a sack to a cottage, placed further back in the picture. The perspective might have afforded a hint for Hogarth's pictorial commentary on the subject, as the artist clearly entertained a Chinese independence of its laws. Two lines at the foot of the cut Mr Jackson has rendered as follows:—

> "Each day that thou the likeness of St Christopher shalt see,
> That day no frightful form of death shall make an end of thee."

There is great boldness in the general treatment of the subject, and the drapery is very good. Besides the *St Christopher*, two other unique wood-cuts are in the possession of Earl Spencer—the *Annunciation* and the *St Bridget*,—these three forming the oldest specimens of this method of engraving known to exist. They all display considerable skill in the practice of the art.

The next step in the progress of the art was the application of it in the production of Block Books, of which the earliest appeared about 1450. The best known of these works is the Biblia Pauperum, which, like the others, consists of a series of rude engravings, each occupying a page, but divided into compartments, containing pictorial illustrations of scripture, with texts added, to assist the memory. These were of course the immediate forerunners of the art of printing with moveable types, and though more easily multiplied than the manuscripts which they were meant to supply, must have been produced with great labour. Two *fac-simile* cuts are here appended to show the degree of skill with which these works were executed. The blocks were engraved by Mr Jackson, for his

treatise, but not having been inserted in that work, were liberally offered to us as illustrations. They must be regarded as equally curious and valuable, being exact copies of the originals, which were engraved upwards of three centuries ago.

The Holy Family.—Date 1450.

The first represents the *Holy Family*, the Virgin is reading a book, and Joseph in a listening attitude; the Saviour is seen above, lying in a manger, while the artist has represented the natural denizens of the place, the cattle, gazing upon the infant.

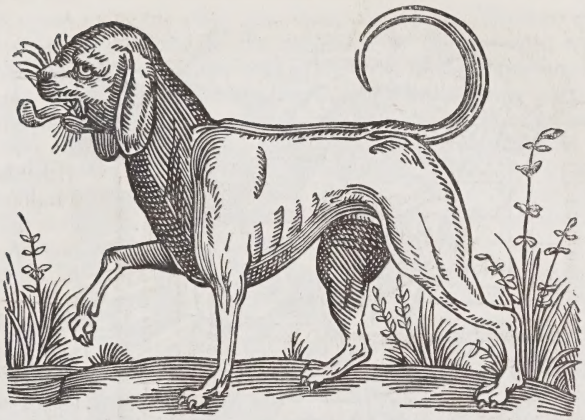
The subject of the other block is the *Annunciation* (see next page). The Holy Ghost is seen communicating with the Virgin Mother, who is again employed with a book, her hands crossed devoutly upon her breast. An angel also attests the Divine Intelligence; while a scroll is introduced into the picture, bearing a holy text to heighten the effect intended to be produced by the engraving on the mind of the student—the Poor Preacher—for whom the original work was executed.

But a revolution was about to take place, which forms an era in the world's history. Gutemburg invented the art of printing, and the block-books were superseded by the productions of the press. The progress of typography was at first watched with jealousy by the block-cutters, as injurious to their trade, but they soon found

The Annunciation.—Date 1450.

that the moveable types of Scheffer were well adapted for employment in the same page with the productions of the graver, and henceforth the letter cutting was abandoned, and the avocations of printer and engraver became distinct in their character, and were followed by widely different individuals. The first printed books containing wood-cuts appear to have been produced in Italy, but they were introduced by Caxton into the second edition of his *Game and Playe of the Chesse*, a small folio, printed about 1476, and were frequently afterwards employed by him. In order to afford the reader a correct notion of the state of the art in its first introduction into our country, we subjoin a *fac simile* of a cut in *The Booke of Hunting and Hawking*, (see p. 185), printed at St Alban's in 1486. It represents one of the dogs so strenuously recommended by the writer of that first book of sporting, and makes but a sorry figure in comparison with the modern works of our Landseers and Coopers.

We append likewise two other specimens of early English wood-cutting—the one a portrait of Queen Elizabeth, copied from Stowe; the other a representation of an old Printing-house. In the first, the Virgin Queen appears in the starched and prim attitude in which she is so frequently represented, with the sceptre and ball, and arrayed in the habiliments of royalty.



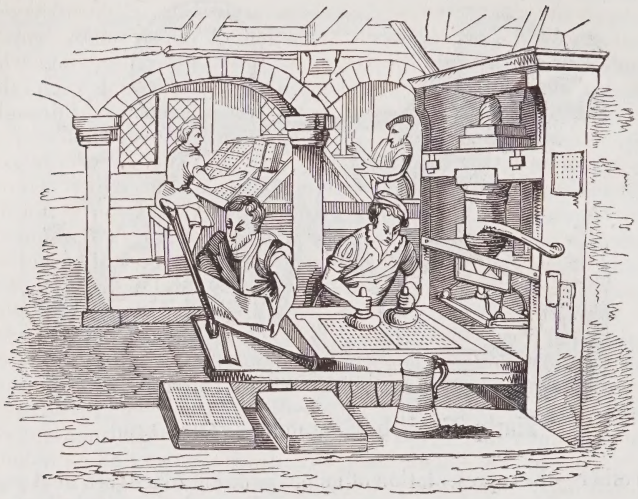
Early English Engraving.—Date 1486.

The other—the representation of an old printing office (see next page) shows the mode in which the earlier typographers—when steam-engines were unknown and steam-presses undreamt of—carried on their avocation. It is from *The Doome warning all Men to the Judgment*, 1581, a black-letter quarto. We have the compositor seated at his work, the reader engaged with a proof, and the pressmen busy. A pot of beer decorates the foreground, and affords evidence that the followers of the art of the German Gutemburg had copied, in addition to his avocation, the peculiar German fondness for beer. The work is going on in an old chapel, the usual locality for printing offices in those days, and it is from this circumstance that they are even to the present day denominated 'Chapels.'

Elizabeth.

Many other of Caxton's works contained wood engravings. Those in *Chaucer's Canterbury Tales* are the admitted productions of English engravers, those printed previously having been claimed as the productions of other countries.

The first *Maps* engraved on wood were published in 1482, in an edition of Ptolemy. Upon this subject Mr Jackson remarks:—"In a folio edition of Ptolemy, printed at Venice in 1511, the outlines of the maps, with the indications of the mountains and rivers, are cut on wood, and the names of the places are printed in type, of



Ancient Printing Office.

different sizes, and with red and black ink. For instance, in the map of Britain—which is more correct than any which had previously appeared—the word 'ALBION' is printed in large capitals, and the word 'GADINI' in small capitals, and both with red ink. The words 'Curia' and 'Bremenium' are printed in small Roman characters, and with black ink. The names of the rivers are also in small Roman, and in black ink. Such of those maps as contain many names are almost full of type. The double borders surrounding them, within which the degrees of latitude are marked, appear to have been formed of separate pieces of metal, in the manner of wide double rules. At the head of several of the maps there are figures of animals emblematic of the country. In the first map of Africa there are two parrots; in the second an animal like a jackal, and a nondescript; in the third, containing Egypt, a crocodile, and a monstrous kind of fish, like a dragon; and in the fourth, two parrots. In the last, the 'curious observer' will note a specimen of decorative printing from two blocks of wood; for the beak, wing, and tail of one of the parrots is printed in red. In the last map—of Loraine—in an edition of Ptolemy, in folio, printed at Strasburg in 1513, by John Schott, the attempt to print in colours in the manner of *chiar'oscuro* wood engravings, is carried yet further. The hills and woods are printed green; the indications of towns and cities, and the names of the most considerable places, are red; while the names of the smaller places are black. For this map, executed in three colours, green, red, and black, there would be required two wood engravings and two forms of type, each of which would have to be separately printed. The arms which form a border to the map are printed in their proper heraldic colours."

We now pass to what has been styled the Golden Age of wood engraving, when, at the beginning of the sixteenth century, Albert Durer came into the field. In most of the engravings which bear his mark we find cross-hatching (lines crossing each other) freely introduced—an argument that Durer was merely the draughtsman, and not the engraver,—as, though it is a ready mode of producing an effect in drawing with a pen or pencil, yet it is to the engraver a work of considerable labour. "Had Albert Durer," says Mr Jackson, "engraved his own designs, I am inclined to think he would not have introduced cross-hatching so frequently, but would have attempted the effect by means easier of execution." * * * * "The execution of cross-hatching requires time, but very little talent; and a moderately clever lad, with a steady hand and a lozenge-pointed tool, will cut in a year a *square yard* of such cross-hatching as is generally found in the largest of the cuts supposed to have been engraved by Albert Durer. In the works of Bewick, scarcely more than one trifling instance of cross-hatching is to be found; and in the productions of all other modern wood engravers who have made their own drawings, we find cross-hatching sparingly introduced; while in almost every one of the cuts designed by Durer, Cranach, Burgmair, and others who are known to have been painters of eminence in their day, it is of frequent occurrence. Had these masters engraved their own designs on wood, as has been very generally supposed, they probably would have introduced much less cross-hatching into their subjects; but as there is every reason to believe that they only made the drawing on the wood, the engravings which are ascribed to them abound in lines which are readily made with a pen or pencil, but which require considerable time to cut with a graver."

One of the best of Albert Durer's wood engravings is the *Bearing the Cross*, from his great work, 'Christ's Passion.' It is a good exemplification of his style, and Mr Jackson has a *fac simile* of it in his treatise. With reference to this he says:—"In Durer's designs on wood we perceive not only more correct drawing and a greater knowledge of composition, but also a much more effective combination of light and shade, than are to be found in any wood-cuts executed before the date of his earliest work, the 'Apocalypse,' which appeared in 1498. One of the peculiar advantages of wood engraving is the effect with which strong shades can be represented; and of this Durer has generally availed himself with the greatest skill. On comparing his works engraved on wood with all those previously executed in the same manner, we shall find that his figures are not only much better drawn and more skilfully grouped, but that, instead of sticking in hard outline, against the background, they stand out with the natural appearance of rotundity."

Durer was followed by a number of engravers who have been classed as belonging to his school. The 'Triumphs of Maximilian,' projected and executed for that emperor—does not appear to contain one design of Albert's, though a similarity of style shows the influence his talents had exerted on the art. As a specimen of his school we

are able to give, from the same source as the other cuts, a *fac simile* of an old engraving by one of Durer's immediate successors.

It represents the Virgin and Child, and may be regarded as a

good specimen of the engravings of the period, if an allowance is made for the lines being slightly finer than in the original. The drawing, however, upon which its merit depends, has been strictly preserved.

Passing over Burgmair, Cranach, and others, we go on to Holbein, who was the next that lent his talents and his name to advance the art. In 1538, he published at Lyons the first edition of his celebrated *Dance of Death*. These cuts are endowed with so much feeling, and evidence so perfect an acquaintance with the capabilities of the art, that even at the present day it is doubtful whether they could, in those vital particulars, be surpassed. "The manner in which they are engraved is comparatively simple ; there is no laboured and unnecessary cross-hatching where the same effect might be obtained by simpler means ; no display of fine work, merely to show the artist's talent in cutting delicate lines. Every line is expressive ; and the end is always obtained by the simplest means. In this the talent and feeling of the engraver are chiefly displayed. He wastes not his time in mere mechanical execution—which in the present day is often mistaken for excellence ; he endeavours to give to each character its appropriate expression ; and in this he appears to have succeeded better, considering the small size of the cuts, than any other wood engraver, either of times past or present." It is doubtful, however, whether Holbein did more than design the subjects. Like Durer, who went before, and Rubens, who followed him, time was too valuable to be employed in the comparatively slow and laborious work of engraving the blocks.

After Holbein the art rapidly declined in other countries, but improved in England. The Print-room of the British Museum contains many works, ranging between 1590 and 1610, in which considerable skill is evinced. Christopher Jegher was the engraver of many of them, and several were drawn on the wood by Rubens, whose motive to the work was doubtless to compare his own designs with those of the older German masters, particularly Durer. We shall here again put our author under contribution, for his summary of the condition of the art between the period we have been speaking of and the advent of Bewick, and foundation of our modern school. "Though several English wood engravings of the reigns of James I and Charles I have evidently been executed by professed wood engravers, yet a great proportion of those contained in English books and pamphlets printed in this country during the seventeenth century appear to have been the work of persons who had not learnt and did not regularly practise the art. * * Between 1650 and 1700 wood engraving, as a means of multiplying the designs of eminent artists, either as illustrations of books or as separate cuts, may be considered as having reached its lowest ebb. A few tolerably well executed cuts of ornaments are occasionally to be found in Italian, French, and Dutch books of this period ; but though they sufficiently attest that the race *of workmen* was not wholly extinct, they also afford ample proof that *artists* like those of former times had ceased to furnish designs for the wood engraver. The art of design was then, however, in a languishing condition throughout

Europe; and even supposing that wood engraving had been as much in fashion as copper-plate printing then was for the purpose of illustrating books, it would be vain to expect in wood-cuts that excellence of composition and drawing which is not to be found in the works of the best painters of the time. Wood engravings, to please, must possess *some* merit in the design—must show some trait of feeling for his subject on the part of the designer. Deficiency in this respect can never be compensated by dexterity of execution: in anything that approaches to fine art, mere workmanship, the result of laborious application, can never atone for want of mind. The man who drew a portrait of Queen Ann with a pen, and wrote the Psalms in the lines of the face, and in the curls of the hair, in characters so small that it required a glass to read them, does not rank with a Vandyke or a Reynolds, or even with a Lely or a Kneller. At the period of the greatest decline of wood engraving, the want that was felt was not of working engravers to execute cuts, but of talented artists to design them. To give more specimens of wood engraving when in its lowest state of declension has not been thought necessary; for even at this period it would not be difficult to produce cuts which in point of mere execution are superior to many which appeared when the art was at its height. It is sufficient to have stated that, towards the end of the seventeenth century, wood engraving for the higher purposes of the art had sunk into utter neglect; that the best productions of the regular wood engravers of the period mostly consist of unmeaning ornaments, which neither excite feeling nor suggest a thought."

With a whole month before us we purpose culling the best and choicest works of our living wood engravers—to gather and arrange a collection of those gems which form a new era in the history of the Fine Arts. The enduring triumphs of modern engraving are the glorious means of extending through every ramification of the civilized world a more intimate knowledge and increasing love of the beautiful in nature and in art.

JOAN OF ARC;

MODELLED BY THE LATE PRINCESS MARIE OF ORLEANS.

The glare of sun-rise, or the watch-fire's gleam,
Reflected from thy steel-cased symmetry;
The lillied radiance of thy banner's beam,
Opening its bosom to heaven's sanction high;
Were but the outward beacons of thy goal,
The light that bursts through caves of earth's despair
O, Maid! of humblest birth and loftiest soul,
Whose inward glory monarchs may not share,
A Princess of thy land has since beheld
The skirts of thy gone splendour—fraught with prayer—
And thine heroic loveliness unquelled,
She sought to fix in mortal semblance here,
Embalming thus her name by thoughts which all revere. H.

REVIEWERS REVIEWED.

EXAMINATION OF ARTICLE THE FIRST IN THE JULY NUMBER OF THE BRITISH AND FOREIGN REVIEW, 1839.

When a man places himself before the world as a critic, it behoves him to know fully what he is about, else that world which he would enlighten becomes misled. There are few instances of modern date in which criticism on art, aiming at a lofty—nay, a dictatorial style, has not strayed into the mire of absolute error; wherefore it is expedient as often as possible to neutralize its effect in the mind of a bewildered public. The critique in the 'British and Foreign Review' on the work of Mr G. F. Waagen, Director of the Royal Gallery at Berlin, is what we are going to examine.

The writer commences with erroneous premises, by attributing the progress of art within the last fifty years to the mere progress of civilization. He also states that "neither the love of the art, nor the desire of possession, has been allied to cultivated taste and competent knowledge; and the vanity that induced the wealthy collector to prefer the name of a great master to the possession of genuine pictures, calculated to gratify the taste and improve the mind, has led to a system of deception and robbery, somewhat checked, but still practised to a great extent."

This staggering dash-off, full drive, compels us to cry, Halt! As you were! Stand at ease! Ground arms, and let us look at you.

The first plant put into the soil of refined taste commenced with Charles the First's reign. Vandyke settled here as a portrait painter. He made a second visit before he resolved to remain, and was appointed the Court painter.

The Duke of Buckingham purchased from Rubens, at Antwerp, a vast collection of admirable pictures, which that renowned painter had brought together; among them were many Italian works of high order, and several of Rubens's own brilliant productions. This set taste on the move, and our nobility sought equal beauties in art. The Dukes of Marlborough became purchasers, as Blenheim proves. The Duke of Devonshire collected pictures of a high class; and as a proof of some taste existing, the famed work of Claude Lorraine, called the 'Liber Veritatis,' was also purchased, and is in the present Duke's possession. Thus our nobility of that period did not purchase from "mere mimicry," but from conviction of worth and excellence.

The House of Commons had the opportunity of buying the Cartoons of Raphael; such, at least, as were saved from perdition; for it is perfectly true they were considered of secondary value to the Tapestries executed expressly from them by order of Pope Leo the Tenth. The penetration of our then Parliament was sufficient to secure for the nation these precious debris of graphic and poetic perfection in high art, which may justly be said to form the nucleus of national taste. They are national, and not royal property; for it was by a grant of the public money they were purchased.

The Earls of Warwick, Bute, and Radnor, the Marquis of Exeter, Lord Orford, and other Nobles, brought the finest pictures from Italy and Flanders which money could purchase. These were no picture dealers, nor a "Skinner's Company." *

After Vandyke had painted a few years in England, his genius for portraits taught the highest dignitaries, as did Sir Joshua Reynolds the nobility in his time, what was meant by fine art. We fear what our critic says in regard to colouring, and the "mechanical system," would suffer most amazingly, if it were tested against either Vandyke, Rubens, Titian, Giorgione, Bassano (the Teniers of Italy), Paul Veronese, Tintoretto, numerous other great colourists, or Sir Joshua Reynolds. In fact, he has spread out for artists a dish as impossible to be partaken of as was the fox's treat to the stork put into a plate, or the stork's return of the compliment by serving up his feast in a long-necked bottle. The system may do for him who understands his thousand and one tints. It will not advantage any artists but rainbow painters, and imitators of objects seen through a prism. Let his theory of the prismatics be dealt with by artists. We fear that when his order of the day and decimal scale of graduated colours is read, some of them will fall into convulsions of laughter, and medical aid be required, as well as some new-fangled pump put into requisition, to extract the colours which jumped down their throats, whether they chose to swallow them or not. This scheme of his is a pop-gun of ten feet bore, charged with prismatics, well wadded down by the author, and discharged by him full smash into every painter's face, entering his eyes and gullet to seize the heart, and thence work its way to the mind. We think we see one of these discharges, consisting of house-painters' pound brushes, all holding various degrees of prismatic colours, flying through the air and making rainbows over everything, splashing red, blue, and yellow into every eye that gazed at the phenomenon. Our critic's system reminds us of a visit the high priest of Apollo paid to Apelles one day, to look at a work of some consequence. The priest, thinking himself qualified to make a boast of his ability to criticise, uttered such nonsense that Apelles could not refrain from smiling in his face. Going close to the great man, he whispered into his ear that his colour-grinder was in the room, and behind the picture. "Well!" said the priest, "what of that?" "If my colour-grinder," said Apelles, "hears but half what you say, he will burst out into a fit of laughter."

But, alas! poor Mr Waagen and his work, supposed to be criticised or followed in its paths by the author we are tracing. We think very few who read the long article in the July Number of the 'British and Foreign Review' for the present year 1839, will keep, or be able to keep in sight what the author or critic is about, or what relation his penmanship bears to Mr Waagen's work as a critique. It is amusing, and shows he has seen a good many pictures here and there; but as far as the work is concerned, the name

* The nick-name given to the article in the 'British and Foreign Review,' in consequence of the writer having styled picture cleaners generally as a "Skinner's Company."—Ed.

of the author is mentioned as having appeared to a book published last year on 'Works of Art and Artists in England,' and that is all.

It is not our intention just now to go into the merits of Mr Waagen's work; the steam being up, we are in full chase after the critic, lest he should do some mischief or damage to public opinion.

We really should like to know what he means by these words, regarding the management of the Royal Academy—"And until some powerfully-minded, independent Academicians sternly reform the practices which have crept in, they will continue, and perhaps increase, though a Haydon may scribble his rhapsodies, or even a genius like Martin scornfully condemn them." Bow-wow-wow. Take care, ye condemned crew; and remember the wit of the celebrated Frenchman, Piron, who, anxious to become a member of the French Academy of Sciences and Belles-Lettres, wrote this epitaph for himself:—

"Ci gît Piron qui ne fut rien
Pas même Academicien."

Why don't all the disappointed commence an open fire of wit against these ugly offenders, and pelt them with all the R.A.'s in every alphabet, till they quit their hold and give up the field to their bran-and-saw-dust plank-men opponents? What follows, however, is most devilish severe, and we warrant will be found to out-Herod anything the Waagens in Prussia, Saxony, and Germany put together, could, or can say. "One half of the schism and squabbling arises from the fact of Academicians, under the influence of vanity, in a state of acetous fermentation, thrusting as many pictures as they can into the best places, though the greater number of them are miserable portraits, which are only fit to cover the walls of a garret, or amuse the rats in a lumber-room."

Did but our critic know the code of laws regulating the management of the Royal Academy, sanctioned and approved by the founder, George the Third, and handed to him by the excellent West (whose great merits—shame be it spoken—have not yet found judgment enough in England to appreciate properly), he would employ another strain. It is nearly thirty years ago that the council at the time suggested a limitation to eight works to be sent for exhibition, which affected all alike, members and mere exhibitors; and related equally to miniatures or seal impressions, as it did to sculpture and pictures, great or small. This law of limitation, restricting, as we have said, the members equally with all other artists, was confirmed at a general meeting, and became a fixed law. We ask, in the name of the ill-used and insulted Royal Academy, whether such a free, unsolicited, unrequested act, was one proceeding from selfishness or liberality? Another law of regulation limits the number that any artist, member or no member, can have in any one room. These two laws acting together seem to us to be calculated to diffuse equality of rights as far as it is possible to go.

Let us, for the sake of justice to the Academy, ask *en passant*, if the members are to devote all their time, day and night, as the

meetings may be convened, to attend councils, general assemblies, the arrangements of each year's exhibition (compelled to be present at or before seven in the morning till nightfall), labouring for more than three weeks, and derive no advantages? It is an absurd conception. Are strangers in such a case to come and bestow their ignorance on the body, by assuming a knowledge of the art of hanging pictures and drawings, and arranging various pieces of sculpture, while the Academy bears out of the funds all the expenses? Does any artist (for we have inquired) pay one fraction for the admission of his works, or does he contribute one farthing to the maintenance of the three schools? Has he not, as well as every student, the privilege of free admission to the exhibitions, to the lectures, and to the library? Are there not artists (Academicians) always at their post in the Antique, the Life, and Painting Schools, during eight months of the year? Are members of institutions to be debarred of certain privileges, because those who have not a diploma, or are not initiated for admission, claim a right to roar out, and bellow, and bray like asses at every corner of a street, calling out, "Shame! Shame! Shame!" What for? That they may increase their numbers by every ragged house and sign painter they can enlist to join their hubbub club.

Before we proceed a word further, we must declare unequivocally, that we are not criticising Mr Waagen's work, nor do we care for the present what he writes and prints. Our anxiety is, to put to rights his critic, and examine his critique. Our wag says of Waagen, "Mr Waagen's account of the English school is meagre, unsatisfactory, and partial." If it had been full of turtle fins, or the green fat of eulogy, we should have had no critique; but its bare bones allow of an attack, which, as it advances, knocks down a Royal Academy, and blows up all the host of picture cleaners wholesale, under the title of a Skinner's Company.

God help us, and poor Sir Joshua Reynolds, for we are all in a devil of a mess! run over by Waagens, and run down by a new critic who says, "Mr Waagen dismisses Sir Joshua Reynolds with a few flimsy remarks, and without even a reference to pictures which are justly celebrated." We wish he had been contented to blow up all this, Waagen and all; but no! he must have a touch at the ever-matchless Reynolds. Zounds! we feel as if fire were running through us, at the sight of the hotch-potch stuff uttered as a sort of praise by the critic on one of the wonders of the world in art, his 'Infant Hercules.'

Reader, pray allow us to serve up this dish of the cookery of a new critique on Reynolds. Thus does he speak of the great marvel of art—"The 'Infant Hercules,' in the royal collection of St Petersburg, is, perhaps, the best of those *attempts* (poetical or historical painting), being drawn with more vigour, and conceived with more certainty than either the 'Death of Dido,' or the celebrated 'Ugolino.'" We must pause for breath; for what with the "perhaps," and "*perhaps the best* of those attempts," we are dumbfoundered. Well! to read such trash by way of upholding one of the greatest painters of all modern times, and have such a bit

of mean rind of bacon compliment paid on this magnificent work, by way of correcting the Waagen and horses, which insolently trampled him down, is miserable, most pitiable. Let us tell our fellow penman, that if he had given the world a rich and full description of that wondrous work, and had expended all his powers on it, the credit he would have earned by the justice of his pains would have been a laurel of evergreen. We have, thank God, seen that grand picture of Reynolds. It is the most imposing work in the world for splendour of effect in *chiar 'oscuro*, united to energy of colour, both in tint and body. The hurly-burly of dismay and alarm created by the sight of the noble, and, we may say, terrific infant on his back, strangling the two serpents; the doubts, fears, trepidations, and general consternation among all the actors who rush into the apartment, are so finely conceived, and so poetical, that all the artists on earth may receive our defiance to approach it by any similar attempt. Did our critic pass over the gigantic infant on purpose, for he has not said one word on that superlative part of the composition? or was a critique upon this wonder of art above his match? Some cause there must have been. O critic, critic, wherefore art thou critic? Are ye a cricket, chirping in a chimney corner? Speak, write, nay, scream; but be not so hyper-intolerable as to call that magic work of art "an attempt," and forget to say half a word on the infant. Did you, or did any living creature, ever see so sublime a conception as that giant child put on canvass? Did any critic, amateur, or artist, ever behold such a style of painting and colouring, such an expression of indignation and power, such a mighty grasp as makes one of the serpents form a spiral in wreathing agony, spuming out his life's gore, while the other hisses forth the blue fumes of poison—the very toes outspread, expressing by their action the exertion of the whole frame, and adding soul to the rage of the contending infant? If any of ye have, pray, for the love of graphic grandeur, tell us where it is to be seen, and by whom executed. We would go 5,000 miles barefoot, and walk a mile a day through nettles for the whole distance, to see any such triumph of art on the globe. Poor Prussian Waagen! and poor namby-pamby champion!

We confess our inability to comprehend this passage—"Reynolds can never be placed in the first class, because his conceptions were very limited, and never soared beyond a middle flight but to descend rapidly into that sphere from which he had risen with so much toil and uncertainty." What, in the name of criticism, does this mean? *We* cannot imagine. We have given, however, a tolerable proof that Reynolds could conceive sublimely. What think we all of his 'Portrait of Mrs Siddons as the Tragic Muse?' We ask, where is there any parallel in the world? Who ever painted such a portrait? Not even Titian. Rubens and Vandyke could never have equalled it, had they painted for 1,000 years, and for good reason. The manner of their art, and the feeling of their minds, united to their peculiar technicalities of production by their palettes, would defy the attempt. Correggio, of all the painters, was the man whose colour, impasto, and effect, would have approached it the

most; but his peculiar mind would have caused abortion in original conception.

Reynolds, we must remember, lived at a period when our costume and that of Europe was a combination of the most grotesque absurdity, monstrosity, and distortion, ever seen or worn since Adam's children dressed themselves. How could a painter work to please a people decked out in frizzed heads of hair, curled *en batterie*, *parfaitement poudré*, with pounds of perfumed grease rubbed in; *bouffant* handkerchiefs to the ladies' necks, half burying their faces; stomachers laced to the very hips, enough to make every woman scream with agony; the hips themselves swelled out with side bustles, called jacket-hoops; and the feet propped up on stilts for heels, actually made of large pieces of wood; the gowns drawn through the gaping pocket-holes as big as horse-collars; and a cap on the head enough to frighten a whale, with laces, lappets, and bows dangling, God knows for what purpose? The men had their share of frizzing and plastering with powder and pomatum; often a pound crammed in every morning, with side batteries of curls, pinned up into due form; and when all was ready for the grand *coup-de-maître*, the *coiffeur* took his distance, surveyed his victim, straddled his legs theatrically, and then called out, *shot-ee dee* eye, when he commenced a regular attack upon the grand *tete de veau* with powder, making such a smoky dust, that in these our days the house would be thought on fire, such was the cloud. When Monsieur le Friseur had done, he politely told the patient dat he might open *dee eye*. Ay, a beautiful sight it was, enough to make one die of laughter! His face all white, covered as with hoar frost, deep and thick; his lips, previously compressed, now open and looking horridly red; his eyes smarting with the squeeze they had undergone, and the subtle penetrating perfumed white dust within the shutters. In conclusion, the operator took from his portentous pocket a spatula, *bien mince*, with which he carved out an elegant elliptical curve at the two summits of the templar part of the cranium, and having scraped the face and arranged the pomatumed and powdered whiskers by learned touches of his pliant face knife, declared to our countryman, "*Que son affaire étoit finie.*" This is a true picture. Pray, Mr Critic, and also Mr Reader, what artist could hope for patronage in those days, if he wandered from the pomatum and starch fashion? Even the severe Fuseli could not avoid contamination. All his Fairies had British powdered heads *à la Pyramide*, and batteries of curls.

Let us now try to get on after lifting noble Reynolds out of the mire of insignificant, contemptible, Foreign and British criticism.

As to the plan of hanging the pictures of the Royal Exhibition, their proposed distance from the floor, four feet, and putting prices of those for sale in the catalogue, it is not worth powder and shot. All we shall offer on this point is, that if the critic were to be hangman for but one season, follow up his plan, and place no picture lower than four feet from the ground, he would have to turn out some hundreds more than is the misfortune to artists to endure at present. We say misfortune, for no man sends a picture, however

small or trifling, but sees in it a merit he hopes other eyes may discover; and with great numbers, we believe, any place rather than no place is preferred. Besides, we would fain ask our critic what could be done with the vast number of small pictures discovered every year on the various walls of the Royal Academy? Our critic, and others whom we could name, would be most cruelly puzzled, we conceive, to hang all their own pictures of merit, with those of the crowd of exhibitors, and the condemned Academicians, in fair, fine places. Have not these hyper-pseudo-self-dubbed judges a place of their own, in which they can display their singular talents in hanging? Does our good critic remember that these emaculates, and would-be Governors and Directors-General of the Dispensary for hanging talents, hang the works of brethren of the brush down, down to the dirty ground? Do not the hangmen of the British Institution hang pictures very nearly resting on the ground? O fie, you blind gentlemen! Go! squall out at those shops; dictate to those which are free Institutions; and leave the Royal cads to manage their own omnibus. We think the latter do all things pretty well.

We have just looked over our present year's catalogue, in which we numbered the amount of insignificant "acres of daubing," called portraits; and those which were even with the eye, technically called under the line, amounted to twenty-one in all the three large and principal rooms. In the East Room there were only four, the total number of pictures 253, being the enormous amount of the sixty-third part. Ten portraits, big and little, were on and under the line in the Middle Room, out of 169 pictures, being within one of a seventeenth, but many were reduced sizes; and in the West Room, out of 161 pictures, seven only were on the line. We think this proves that portraits on and under the line constituted but about a twenty-eighth portion of 584 pictures.

In page 31 we have a strange sentence, with a qualification for a technicality too new for us dolts to comprehend. Speaking again of Waagen's view of West's talent, this observation occurs—"He has mistaken hardness of texture for mechanical conception and execution." "Mechanical conception" relating to a surface! Was there ever any mechanical conception in West, or in any other creature than a shilling doll-maker? The eyes are a mechanical conception, being glass; and a capital trading business it is, keeping in one establishment in Birmingham fourteen hands incessantly employed. The body, and legs and thighs, hands and feet, are all admirable mechanical conceptions; for all are made as nearly alike as possible—so are their curly wigs and jointless fingers. The above mode of describing West will not do. We must allow the reader to follow Waagen's critic; for if he does not do justice to West, we cordially allow that such is his amiable and just aim. We shall say for ourselves, that West was as unjustly tried and condemned as if his walk of art had been contrary to law, and criminal. No mind was ever more fertile, or hardly so much so. His historical and poetical, his allegorical and landscape productions in drawings, were immense in numbers and super-excellence. A

decimal, or even a hundredth part, were enough to establish a firm, and confer high reputation on any artist. His extreme amount of graphic powers, admitting of an unerring certainty, caused him to fill up each part of a design with his tools and colours, as a mosaic-worker would do from compulsion, piece by piece. This gave rise to the imputation of hardness. It is so far a just observation; and we would walk with our reader much further into the field, had West been encouraged as his high merits demanded. But, commencing with his first picture, painted on his return from Italy, on a small half-length scale, we find a cold chill thrown over his whole frame, enough to blast the strongest resolutions. George the Third was so delighted with it that his Majesty asked Mr West to let it go to St James's Palace to look at and be seen. It went, and remained six months, when shame perhaps seizing the royal breast, the King was about to return it. Her Majesty Queen Charlotte (of ugly memory) took the courage to have also a chance of a loan. She did ask West, and kept it six months longer, showing it to all who visited the Palace; after which time their Majesties, with all royal suavity, and with the most gracious condescension, allowed West to send for it, praising the merits of the work to the upper heavens, but cautiously avoiding to ask the young American artist if he would part with it. Markham, the Archbishop of York, learning all this, was the patron who went to West, asked the truth of the story, and purchased the picture without asking the price, but said, "Then, Mr West, the picture is mine; say the sum."

We remember to have heard West, in his latter days, declare before many persons at a time, that all he had ever received from the public to that hour, as patronage for his historical productions, was 7,000*l*. He left acres of canvass filled with religious compositions, and those of other characters, which were witnesses of the insulting neglect he experienced during his long life. We lament his fate—a fate sure to be the attendant on all historical aspirants in this country. The subject drives all merriment from us. Be it recorded, and for ever retained in memory, that Queen Charlotte withdrew the royal pension of 1,000*l*. a year generously granted by her husband, George the Third, so soon as she had the whole trust of his Majesty's person and privy purse. *Scandalum magnatum.* Disgrace to the name of royalty. She, poor lady, quite forgot that every bit of bread and chicken she ate was paid for and put into her mouth by the people. Out with such contemptible feelings! One remembers these things just as we are forced to recollect the wretch who set fire to and destroyed the magnificent Temple at Delphos. We remember, to execrate.

West deserves everything Waagen's critic says of him, and very much more. Our admiration of his great talent finds delight in adding our mite of tribute to his memory. We revere it; and when we see his works we dwell on the beauties and high points rather than seek to find fault with his weaker side. Peter Pindar ill-naturedly said of his landscapes, "That his trees were too wooden, his rocks too hard, and his sheep too woolly." What would he have said of Martin's?

In page 35 our friend gives us a touch or two on Sir Thomas Lawrence. 'Pon honour, he has handled him very oddly. He acknowledges that he was a graceful painter, but had a mind limited to that of portraiture. Well! if he had, was it not enough? We will not quarrel with the expression of "heavenly portrait," speaking of an unfinished picture of Mrs Dottin. But how can a man unite "fire to grace and beauty," or mark "delicacy with decision?" It is like a fellow who, to show his wit, declares that a circle has not such well-marked angles as a square. Has the 'Medici Venus' fire in her, or is it soft love? Softness we can perceive, but no fire. Has Titian's 'Venus' fire in her, or has his 'Danæ,' or had Correggio's? It is foolish jargon, especially in a critic, to talk of fire in grace and beauty, and energy in elegance. It is quarrelling with peaches and nectarines, because they have not the rough astringency of the quince.

Heighty-tity! Page 35 makes us jump. Behold! "The English school is yet in its teens, and has much liveliness, supposititious [what a comical word] vigorous conceit, vanity, and desire of distinction, which are the characteristics of hobydyhoy-ism." Then come some scholastic thrashings; and we almost feel afraid the rod may even reach ourselves; we shall therefore trip off in our pumps, tip-toe, for fear of making a noise, and hold up our coat-flaps, and look to the ground as it were, while we gaze earnestly through the eye-lashes and brows, to learn if the Waagener critic is near us. British artists, be alive; for what with Waagens and horses, and ogleing at you as some do, you are in a fair way of being rode over *à la Juggernaut*. We ask fearlessly how many great painters lived at a time; and if at any certain periods of ancient date there can be named more eminent men than we have had and really have now? What insolence to tell the artists of this country they are only in their teens. Are the President, Phillips, Turner, Calcott, Collins, Reinagle, Hilton, Mulready, Martin, Wilkie. Roberts, Lee, Eastlake, and the two Landseers, Bell, Leslie, Knight, Wright, young Cooke, Frazer, Allan, Howard, &c. &c. only in their teens? What an insult from this incognito critic! Artists all, will you pocket it, or what will you do? What says Waagen about Hilton and Wilkie? *That* is what we seek for. George Hayter gets well praised; yet is taught and told, that from the want of exactness in the "key and graduation to the background," his picture of the Queen is deficient in harmony and effect. We wonder if the prismatic brush, full of decimal tints, hit his eyes and noddle when he read this article.

We think an apparition will rise to affright the senses of all the artists in the kingdom, consisting of dancing rainbows, tinted to a touch, decimalled in rows. We have a great mind to shut the shutters and go to bed—the legitimate place for dreams—and try to coax up the Iris spirit, and dream till everything resembles a cloud of humming birds. Hush! we are gone to sleep. We dreamed that the sun could scarcely be seen for the quantity of flying painters' brushes and palettes, all bedizened with rows of prismatic "graduations," decimalled, all in perfect order. We thought we saw

every sign-painter of red cows and cabriolets, every house-painter, decorative-painter, paper-stainer, and such chaps, all abroad catching the flying palettes by every contrivance, absolutely knocking out each other's brains with colours, and decimalled coloured arguments, each swearing his collection of tints was the best. A vast rush was made to gain an entrance to the Royal Academy, that these heaven-born and colour-enlightened crowds might insist upon teaching the whole body corporate. The crowd was met at the door by Mr Hilton, the keeper, who made signs that he had a desire to address them. The whizzing continued a long time, till at last a species of calm ensued, when the pale, honest, keeper thus spoke: "Brethren of the brush, and painters in general, hear what I have to say on the new doctrine you bring. First, I am instructed to inform you that the general assembly has ordered sets of scales and weights to be furnished forthwith, in order that the coloured arguments of Waagen's opponent may be scrupulously weighed, and that the assembly may form a 'graduated scale' of prismatic tints, approved, tested, and confirmed up to ten million calculations of the forces. But, gentlemen of the New Rainbow Club, we, unfortunate blind daubers of the Academy, have been taught, by the example of Teniers and Murillo, that pictures can be produced of enchanting effect without more than two general tints—'graduations' of gray and amber tones, with a red wafer popped somewhere near to the gray à la Teniers; and by Murillo, a mass of gray and a single cloak of a deep rosy colour, with nearly a pitch dark background. Gentlemen, is this right?" "No," screamed the crowds; "these fellows did not graduate their pictures as they ought to have done. Betty Martin is the man. He can show you colours at such a distance, and so minute as to the figures, that his pictures require an opera-glass to discover all their beauties." "Remember," said one among the crowd, a moon-faced, pug-nosed, athletic-built fellow, "remember what Lytton Bulwer says of Martin in his work, 'England and the English.' Martin has such poesy in his works, that he represents the sun, the moon, and a comet all at once. There, my fine fellows of the mud and dirt company, what say you to that? Who among you is such a poet of a painter? There's a sight! A bright sun, a bright moon, and a comet seen all at once!" "Bravo! bravo!" roared the mob of prismaticised new painters. A tame, twopenny-halfpenny Academician hereupon ventured to say, "Mr Moon-face, what you have told us of Martin's power is more than an angel can do; for if the sun shines, his light puts out the moon and the comet entirely; and when the moon shines alone, the comet is scarcely seen; and when the comet shines, it is alone." "Down with that old humbug," cried the Rainbow Radicals. The uproar was terrible, until one among the crowd exclaimed, "*There!* there! there's the Witch of Endor! Behold she brings an odd little ghost with her; each embraces the other." The crowd being amazed, called out, "Clear the way! clear the way! let's hear what they have to say." The Witch presented no less a personage than Mr Fuseli. With powdered and frizzed head of hair he approached, and being placed on a table to be seen, said, "Gaentelmen, you

seem to me to be all in a vfery great agitation; pray what is it all apout? I hear dare is a great discoffery of some d——d clever vfellowe, all about ko-lors. For my part, I thought their best use was to embo-dee de painter's mind upon canvass; to enaple him to obtain expression, delineate action and passion; prodooce som effects; to round de parts; and to make de beholder know what de painter intended. I remember vhen I did read Mr Winkelman's work upon dee Arts of dee Ancient Greeks, dat he does tell us dat it vas observed in the times of Julius and Augustus Cæsar, dat de Roman nobles did look upon de painted vases of de Greeks vith moche vonder. Dey did remark, dat *vit four ko-lors* dese painters did bring forth such beauties, vitout de appearance of ko-lors dat it vas most astonishing and bevitching. Dey said, here are no ko-lors dat be bright and vivid, like de present paintings; yet these somewhat kolorless pictu-res enchant moch more dan de fine vivide red, plue, and yellow vorks of our men. 'Vat is de reason?' said Cæsar. Nobody could answer him. And be assured, gaentelmen, dat Titian and Giorgione were dee only two painters who ever diskovered dee true art of harmony, and simplicity of ko-lors. All de fuss you are now making about de ten sets of graduated ko-lors, be assured, is all de most d——d trash and nonsense in de vorld. Vat! most a painter never dip his brush in some 'pure' ko-lor, and make his tints vit de brosh? Go along vit you! Renounce all dis d——d nonsense! Go home; and I and de Vitch of Endor will vish you von good night." Away they went, the crowd bedaubing each other with all the decimalled prismatics on the palettes they had caught. Peace was restored, Hilton withdrew, the porters shut the gates, all were soon at rest, and we awoke.

What Waagen's follower says of Turner, the R.A., is "meagre" and unjust. We must tell him, that genius is not confined by rules and laws. "His works," says our critic, "resemble nothing in the sky above us, on the earth, the sea, or anything beneath the earth (which our antipodes are apt to call sky too); they are phantasies which sometimes excite wonder, sometimes pity. If they are landscapes, then Wilson's are not; neither are Claude's, Poussin's, Domenichino's, Ruysdael's, or Hobbema's: either Turner is wrong, or they are all wrong." We are out of breath again. Materialism suffocates by its pressure all that is ideal. Will our friend do us the justice to confess, that all the articles in a confectioner's shop of the sweetmeat tribe are compositions of sugar? They are handsome, and varied to the eye in colour, form, and representation. Would he not be surprised if he caught his maid-servant sweetening his tea or coffee with sugar-plums and red and white sugar-rings, a broken imitation of a mutton chop, half a kidney, or a bit of Fieschi's face?

It is just the same with our Waagen driver; he would not allow anything new in landscape art, which soared into the regions of poetic imagination. Turner is as far above such pseudo critics as are the clouds above Mont Blanc on a clear day. Turner never had an equal; he never can have an equal. He is a prodigy of Nature, teaching her continually how to adorn herself. He is confined to no sort of boundary for subject. Who does not remember in the

past exhibition the magic picture of 'The Fighting *Temeraire* coming to her last Berth,' towed by a brown and black steamer? Is it not poetical treatment, sublimity of effect, and magical execution, which raise the picture and the artist to the highest rank possible? What painter of olden times ever produced such a piece of colouring and art? Now, because this is not like Hobbema, Ruysdael, Wilson, or Gainsborough and Co., it cannot be right. What unphilosophical jargon is all this! Abominable nonsense! It reminds us of the answer Fuseli made one day to a gentleman at his exhibition, called the Milton Gallery. While the gentleman was looking at the picture of 'Satan Bridging his Way to the Earth through Chaos,' and contemplating that matchless idea embodied in a matchless manner, he turned round to the artist and said, "Well, you may say what you like about Milton and his sublimity, but the fact is I don't understand him!" Fuseli gave him a look enough to pierce him through; and forming his face into a suitable expression of contempt and disdain, replied, "Sir, dat is not Milton's *faul-t!*" This was uttered with emphasis enough to make my gentleman think the devil himself was speaking.

Look, reader, at the middle of page 38, beginning with "If Etty." We are not criticising our artists; we are following up the critic. But we would ask him if the Landseers, Lee, Bell, Reinagle, R.A., young Cooke, Frazer, Harding, Havell, John Knight, Stanfield, Linton, Maclise, A.R.A., Frank Grant, Uwins, R.A., Ward, R.A., Williams, the Italian costumist, and many others, might not mingle with the very few names to be found in his tiny catalogue of two lines? It is our opinion this is not a fair way of dealing.

In talking of young Reinagle, who was by an accidental circumstance the guest of Captain Martin, Commander of the brig *Mosquito*, at the battle of Navarino, and Bonington, he mentions them as "artists of promise." How can a man write in such a way? Each has produced masterpieces. As well might he say of W. V. Velde, the Dutch marine painter, or of Adrian Ostade, or David Teniers, they were artists of promise. Yes, they were indeed; and so were the two moderns just named. Were there ever such drawings (sketches so called) as young Reinagle, the beloved and estimable youth, produced on gray paper, heightened with the extremes of black and white chalk? No, never! by any hand which ever yet held a pencil. The large drawing bought at the sale of his works at Messrs Christie and Manson's, by old Capt. Smith, of the Royal Navy, representing the battle of Trafalgar, is a work of art which ought to find its way into our National Gallery. We pronounce it to be not only one of the most beautiful and masterly works, as art, but one of the most correct nautical designs on record.

Sir Joshua Reynolds it was who gave name and character to the British school. How he effected this is a natural question. Sir Joshua perceived, it would seem, that body of colour was best calculated to imitate solids. The next position is, that when a body of colours is worked in together, greater facilities present themselves for accomplishing a rich effect by an impasto of colours, than by thin and frequent layers. Rembrandt's works, on the one hand,

taught Sir Joshua the value of alternate bodies, of solid and transparent or diaphonous coats of colour. From him he learned the magic charms of effect. But though he imitated the good principles, he was not a copyist; very, very far from it. But when we mention Correggio, it is quite impossible to say the same thing. The 'Marriage of St Catherine' in the Louvre is so like the solid body of colouring of Sir Joshua that it appears as if he had painted it. From Correggio he learned to be confirmed in his ideas of colour to imitate the surfaces of the human frame of both sexes. But we fairly think he learned the true value of bodies of colour to express fleshy appearances, as well as that he caught the original arch graces of infant character from the great painter, who exclaimed, on seeing Raphael's works, "Anch' Io son pittore"—I am also a painter. Here is an expression of *naïvéte*, which goes far to prove that artists know their own merits and value. But to our point. Sir Joshua had so much patronage, that of itself it would force a genius like his to employ the most rapid executive within his grasp. Sitter coming after sitter, as the hours followed, colour-modelling was the order of the day, and exquisite were the charms it produced. A dash of the brushes guided by a fertile mind for effect, led him into paths of unerring success; whilst his followers, Hoppner being foremost, were content (because no geniuses) to take up the means for the end. Hence the plasterers and daubers who have formed a dense crowd. But who cares for them? They do little harm.

Raphael's works have long since been valued by the foot and inch. "Pray," says some dab of nobility to Mr Woodburn, "can you recommend me to a good picture of Raphael?" The dealer replies, "My Lord, I think I have a picture which, from its high merits and its perfect condition, will meet your wishes." "Can I see it?" "O yes, my Lord; will you accompany me into our gallery? This way, my Lord." His noble Lordship is placed in a chair, a curtain is drawn, and a splendid picture appears in its full glory before him; whereupon he commences with a tooth-pick to pick away the remnants of luncheon or breakfast, leans in a perfectly lordly, careless way over the elbow of the chair, cross-legged, and says, "Ay, O! that's a Raphael?" "Yes, my Lord," replies the dealer. "Pray, why did Raphael and so many of the early Italian painters use wood to paint upon when canvass is so light? I'll warrant that's painted on wood; a'nt I right?" "O yes, my Lord." "Ay; you see I am a judge?" "O yes, my Lord; your Lordship is a most excellent judge. I presume, my Lord, you have seen all the precious works of art in Italy?" "Hey! what did you say? There is a confounded bit of gristle sticking between my teeth, and I can't get it out. Please to repeat that ——" "My Lord ——" "O ay, I remember. No, Woodburn, I've not been to Italy yet, but I'm going. What's the price for your Raphael? I suppose it's a genuine Raphael?" "O yes, my Lord; look at the back, see how it is worm-eaten." "*What!*" says his Lordship, "worm-eaten?" "Yes, my Lord, that is a proof of its antiquity and originality. It is on the wood Raphael preferred." "Well, Woodburn, now really it's a pity it's on wood; I don't like wood; it makes a picture so heavy;

and then, you know, it spoils one's walls." "Yes, my Lord; it may take a larger pair of nails to hang it by." "Yes," says my Lord, "and then, d—n it, one's house gets injured by a confounded picture." "Why, my Lord, *who* would not have some contrivances to meet the case, when a Raphael's in question?" "Well, true; but what does it *measure?*" Woodburn now thinks the picture is on the move. "My Lord, it is just four feet six by three feet nine inches, frame included." "By Gosh, what a pity! I wanted a Raphael just three feet four by two feet eight. Have you got any more?" "Any more, my Lord? Any more pictures of Raphael?" "Yes, to be sure, Mr Woodburn; there are plenty, you know." "Where, my Lord? Tell me, I pray you, I would buy them all." "O, there are hundreds to be had in Italy." "Indeed, my Lord!" "Yes, to be sure; why, my cousin bought a spanking large one in Florence the other day for a bagatelle, 500*l.*" "Really, my Lord." "To be sure. Why, I dare say you want as much for yours, though not one quarter the dimensions?" "The *same* price, my Lord! Allow me to say that Mr Coesveldt has offered me 2,500*l.* for it, and I refused it. My price is 5,000*l.*, not a penny less." "Ha, well! as you say, that *is* more money; and more than I will give for a Raphael. I shall pick up one soon, I dare say. Good morning, Woodburn." "My Lord, I wish your Lordship a very good morning." "Hoy, Woodburn, you may, you know, see such a thing as a Raphael the size I want; some of the sales coming on at Foster's or Stanley's may have one. Be on the look out; I'll give you five per cent. profit, down at once by a cheque on my banker, Coutts; it's a good house, a very good house, all our family bank there." "I am happy to hear it." "Well, good bye, Woodburn; don't forget me." "No, my Lord, I will *not*." We would say, who would? But our foolish patrons of art, as they call themselves, the *pseudos*, positively talk of *dimensions* when treating for *chef-d'œuvres* of art. We have had just such a scene detailed by one of the Woodburns. It is true to the letter.

The sentiments expressed with just feelings of scorn at the abominable supineness of our Government, whether Tory or Whig, or Whig or Tory, as relates to the cultivation of the arts in England, deserve all commendation. It is, we own, an act of base meanness not to seize such opportunities as offer for the acquisition of precious works of art, when at moderate prices, or even at great ones. England, in the ascendant, allows most things to pass by her. We know well what such a *terra cotta* would be worth to English artists as is mentioned of Michael Angelo's 'Lorenzo il Magnifico.' But when we tell our readers that the whole Florentine Gallery was offered to the British Government previous to the rapid descent of the French into Italy—sculpture, bronzes, pictures, &c. &c. for 60,000*l.*, and the contents of the Vatican for 72,000*l.*, we may hide our heads with shame. Mark, it was a Tory Government—all powerful. The misuse and abuse of British capital, in other respects, only tends to enrage true patriots. Had these marvellous and matchless collections fallen into our hands, the value of the prize would have been beyond calculation in its beneficial consequences

upon the more rapid establishment of taste in England. Had but such circumstances been known to the nation generally, subscriptions would soon have been raised to carry the point, and almost instantly. One million fifty-eight thousand half-crowns would have made the purchase.

Our contemptible niggling very nearly lost us the Elgin Marble collection. Our miserable shop-keeper pennyworth of mustard feelings lost us the Houghton collection. Why did not Government purchase the Orleans collection? Eighty thousand pounds put it into the hands of three of our noblemen—the Duke of Bridgewater, Lord Gower, and Lord Carlisle. After picking out all the greatest prizes at large fixed prices, as the share of each, the residue sold for all the money, and the auctions and exhibitions (for there were two, in Pallmall and the Lyceum) produced so much more that Bryant received as commission 10,000*l.* for conducting the whole affair.

One of the anomalous circumstances, as a *sequitur* to these events, was the condemnation of all picture-dealers for putting such high prices upon old pictures, when the nobles themselves were the leaders. Had the Orleans collection not been valued in all its separate parts at such high prices, pictures would never have risen to such a pitch of valuation.

When M. de Calonne's collection arrived in England, that being one of the very first exposed for public acquisition and competition, all were sold at excellent prices, but for bagatelle and old song terms compared with the Orleans. The pictures were exhibited in a large room called Spring Gardens Room.

The taste of the English, together with a great flow of money, caused a general demand for pictures. And it is a feather in our cap to have to say, that Wilson set the national taste in motion, and we were led to value Hobbema and Cuyp before any other people of Europe discovered their high merits. *We* put the value on them. Cuyp's pictures, within our remembrance, and of his finest quality, sold for a sixth and an eighth of their present market value. We remember one sold at Mr Purling's sale, in Portland place, a picture evidently painted in two days, for 140*l.* All London spoke of it. The great picture by Both, which had been Sir Lawrence Dundas's, fetched 450 guineas, and long since then 2,500 guineas. The little picture by Guido, called 'La Vierge Couseuse' (the Virgin at needlework), sold for 950 guineas; 150 guineas the first offer, and every continuous bidding 50 guineas till it reached 950 guineas.

If George the Fourth, when Prince of Wales, and his brothers, had had any real feeling for the arts, and had had princely sense to waive particular taste, and had, like Philip of Spain and many other princes and monarchs, given patronage to historical art, we should not have been debased by the desperate vulgarity of the greater part of the Dutch productions, but should have had our minds chastened and enlarged by the works of the Italian masters. Somehow or other, when we go into a house hung with even the best of the works of the Dutch masters, we cannot help uniting our feelings to

butter shops and such trades. But in no case do we ever experience any sensation of depression when surrounded by Italian art; on the contrary, if our minds are capable of an impression at all, it is one of elevation, far beyond ourselves.

Raphael's grand compositions make us always feel little, such is their imposing character. The painter who is the greatest philosopher will be the best poet; and his works, like the immortal Raphael's, will for ever lift the mind and teach it to expand to great ideas. Dutch, and much of Flemish art, lowers us to the condition of vulgar life, and obliges us to admire pots and pans, silks, satins, old boots, and obsolete tables and chairs, when our minds ought to be instructed by dignified characters, with patriarch expressions. The Dutch and Flemish infuse no moral into us. The high Italian art does. For our part, we had rather live with a few Greek vases about us, decorated with monocromate paintings, than the richest collection of Dutch art; we mean, as far as mental enjoyment is concerned. If we wish to have a few specimens of exact and highly technical representations of Nature, embellished with the most enticing finish, the Dutch can alone provide for our wants.

To the prevalence of Dutch taste in England is to be ascribed the general low feeling for art amongst us, both as regards the artists and the public who encourage. Adieu, for the present, lovely art! we may visit you again, and when we do, it shall always be our endeavour, as it shall be our aim, to add our mite to those who contribute to the correction of a false feeling for the arts; and work we will, to place you in a better niche than has been allotted to you in this wealthy, industrious, laborious, patient, all-suffering, burthen-bearing country.

It is a task of no small difficulty to understand at which point of the compass Waagen's tilter sometimes points, for we find censure and praise almost side by side. To follow up this unprofitable pursuit is below our aim. We must, however, try to put some oil and wine into the voluntary gashes given by the critic to our artists, as he gallops forward to arrive at Mons. M. Mérimée's work. He says, "Our secondary artists deter many from purchasing their pictures by demanding prices out of all proportion to their merit, and then complain of want of patronage. Let them attend the public sale rooms, and they will see every day superior works sold for a small part of what they *presumptuously* demand. A much sterner system of criticism, instead of false and fulsome flattery, would improve our school, and raise the value and estimation of its productions; and we should much like to see a supernumerary volume, by some able man, on the English school, added to Mr Waagen's attractive and well-translated work."

At some future opportunity we will undertake to prove the gross injustice of this statement. Meanwhile we will conclude with "*Palmam qui meruit ferat.*"

BEETHOVEN.*

BY GEORGE HOGARTH.

We proceed with our sketch of the character and habits of this great musician, continuing to draw from the recent sources of information described in our former article.

In speaking of the posthumous publication of Beethoven's 'Studies in Harmony and Counterpoint,' or, in other words, his exercises while he studied under Albrechtsberger, we ought to have mentioned that a French translation of this work, by Fetis, was published at Paris in 1833. This translation is much more valuable than the original, as it is enriched with copious notes by the translator, one of the most learned and scientific musicians in Europe, in which (among other interesting matter) he points out the numerous errors, both in precept and example, committed by Beethoven in the kind of treatise which he drew up from the instructions of his master. The rules, taken down, of course, from Albrechtsberger's mouth, are sometimes so obscurely, inaccurately, and even unintelligibly expressed, that the pupil evidently did not comprehend their scope; and, in the examples, instances of bad harmony, false answers to subjects of fugue, and other errors, are pointed out in almost every page. These confused precepts and erroneous examples are calculated, in the original publication, merely to puzzle and bewilder the student; but they become valuable and instructive when accompanied by the acute comments of M. Fetis. They throw, too, a curious light on Beethoven's musical education, and its influence on his character as an artist. "Beethoven," says Fetis, "was not, as has been supposed, unacquainted with the science of music; but the science was too circumscribed for his views. Though, in his works, he wished to respect it, yet it thwarted his most congenial ideas; and in this sense it may be said that it never became familiar to him. Many phrases which fell from his pen in the course of the curious exercises now given to the public, afford evidence of his desire to imbue himself with this science, and of the discouragement which he sometimes derived from it. It is doubtless to this double effect on his mind that we must ascribe Beethoven's efforts, in several of his great compositions, to rise to the highest combinations of counterpoint and fugue, and the dryness which such efforts have given to those productions, as may be particularly remarked in his Masses, and in his oratorio of the 'Mount of Olives.' This collection of Beethoven's studies, therefore, is interesting as being at once the history of his education and of his genius.

Notwithstanding Beethoven's inaptitude for the mysteries of fugue

* This article is "Copyright," and consequently *property*. We mention this as a friendly warning to some of the cheap weekly periodicals, in *one* of which we find the whole of a previous article on the same subject, quoted, word for word, with an intimation that the present memoir will meet the same fate. We have no objection whatever to *fair* extracts; but if we find the threatened course really pursued, we shall undoubtedly apply to the Court of Chancery for protection against the injury.—Ed.

and double counterpoint, and the consequent incompleteness of his scholastic studies, he seems at a very early age to have distinguished himself by his ability as an extemporaneous performer, supplying any deficiencies of learning and experience by native genius and inventive power. So early as the year 1790, while as yet he was pursuing his studies under an obscure teacher at Bonn, he made a short visit to Vienna, for the purpose of hearing Mozart, to whom he had letters of introduction. He played extempore before Mozart, who paid very little attention to the performance, imagining it to be a piece got by heart. At last the young musician, piqued by this indifference, begged Mozart to give him a subject. Mozart muttered to himself,—"Well, stay a little, I will try your metal;" and wrote down a chromatic fugue subject; which, taken backwards, contained a counter subject for a double fugue. Beethoven was not taken in. He worked upon the subject, the hidden properties of which he immediately discovered, for more than half an hour with such force, originality, and genius, that his hearer, more and more confounded, and almost breathless with attention, at last rose, and walking on tiptoe into the adjoining room, where some of his friends were sitting, said to them with great emotion,—"Attend to that young man; you will hear of him one day!"

Beethoven, in truth, was in a great measure self-taught. He was three-and-twenty when he went to pursue his studies in Vienna, and long before that period he had got far beyond the musicians of his native town of Bonn. He was thus left to himself, both as a composer and pianoforte-player, and consequently his style of performance was much more remarkable for force and effect than for taste and delicacy. The celebrated Abbé Sterkel (whose elegant works, now forgotten, are among the pleasantest musical reminiscences of our younger days) was the first who made him aware of his deficiency in this respect. Beethoven, when attending the Elector on a journey, was introduced to Sterkel at Aschaffenburg, where this veteran musician was *maestro di capella*, and was received by him with kindness. Sterkel was by no means a powerful performer, but was distinguished by the grace and precision of his style. When he sat down to the pianoforte, Beethoven stood behind him motionless, with his eyes riveted on the hands which passed over the keys with so delicate and caressing a touch. When Sterkel had done, Beethoven was requested to play in his turn. He declined: but the conversation having fallen on an air with variations, which Beethoven had lately published, and Sterkel having made some remarks on its excessive difficulty, adding, that the author himself could not execute it in a satisfactory manner, Beethoven felt piqued, and asked for a sight of the piece. Sterkel could not find it, and said it was mislaid. Beethoven then began to play such of the variations as he could recollect, adding others extempore, in such a manner that Sterkel and everybody present were confounded. What was remarkable in this improvisation was, that Beethoven, suddenly adopting Sterkel's style of execution, played with a neatness and delicacy which he had never before exhibited. Beethoven, nevertheless, remained during his whole life a rough and slovenly

player, and we have heard him described as such by some of the greatest musicians of the age. His increasing deafness, indeed, must have prevented him from acquiring nicety and precision of execution.

In his earlier days Beethoven was much indebted for happiness, as well as intellectual improvement, to an amiable family of Bonn, of the name of Breuning. Madame de Breuning was the widow of a Court Councillor, and had three sons, and a daughter who was afterwards married to Dr Wegeler, and is affectionately mentioned in Beethoven's correspondence with him under the name of Leonora. Madame de Breuning had a sincere affection for Beethoven, and used to treat him like one of her own family. Harshly treated by his father, Beethoven felt himself happy in a house always open to him, and in which he was almost domesticated. Madame de Breuning's maternal kindness won his heart, and she gained an ascendancy over his wayward spirit which no other person ever possessed. In one respect only her influence failed; she never could conquer his repugnance to give lessons in music. His father, though not indigent, was by no means in easy circumstances; and Beethoven, therefore, found it necessary to take a few pupils. But the drudgery of teaching was intolerable to him. He, indeed, gave lessons to Madame de Breuning's daughter and one of her sons; and, in regard to them, friendship and gratitude made him punctual; but the case was different with his other pupils, whose lessons he used to shuffle off as much as he could. One day, Madame de Breuning having urged him very much to go and give his usual pianoforte lesson at the Austrian Ambassador's, which was opposite her house, Beethoven went away for that purpose; but, when he got to the Ambassador's door, his natural repugnance prevailed, and he returned to Madame de Breuning, saying to her, "For God's sake, madam, don't insist on my giving this lesson to-day, I will give two to-morrow." During his whole life Beethoven retained this dislike to teaching; and, indeed, never had any pupils (at least whom he acknowledged as such) but the Archduke Rudolph and his friend Ferdinand Ries.

Beethoven's intercourse with this excellent family conduced to his improvement as well as his happiness. Entirely engrossed with music (for his father neither knew nor cared for any other pursuit), he remained ignorant of literature, or any kind of general knowledge, till, under the roof of the Breunings, he acquired his first literary ideas, and contracted that taste for reading which he retained to the end of his life.

Ries's acquaintance with Beethoven began in 1800, when Beethoven was thirty, and in the height of his reputation. Ries was then fifteen, and had been sent by his father to Vienna, to profit by the instructions of his celebrated townsman. When he waited on Beethoven, and presented his letter of introduction, Beethoven was busily employed on his oratorio, 'The Mount of Olives,' then about to be produced. He looked over the letter, and said, "I cannot at this moment write to your father; but pray tell him that I have not forgotten my mother's death—that will do for the present." Ries afterwards learned that his father, when Beethoven's mother died, had given assistance to the family, then in distressed circum-

stances. His subsequent conduct to Ries was kind and friendly in the extreme. Notwithstanding his unconquerable repugnance to teaching, which made him constantly refuse to take pupils, he devoted himself zealously to his young friend's education; and, what was still more remarkable, notwithstanding his hasty and impetuous temper, he gave Ries his lessons with the utmost mildness and patience, often making him repeat difficult passages, and even whole movements, ten times over. "In the variations in F major," says Ries, "I had to repeat the last part of the adagio *seventeen* times, Beethoven not being satisfied with a little cadenza, which I thought I played very well. This lesson lasted two hours."

Ries gives some interesting particulars respecting Beethoven's method of teaching.

"When I played the notes of a passage imperfectly," he says, "or touched too slightly notes which ought to have been well marked, Beethoven seldom found fault with me; but if I failed in expression, and did not observe the *crescendos* and other shades of meaning which give a piece its character, he used to get angry. The former fault, he would say, might be the effect of accident; but the latter argued a want of knowledge, sentiment, and attention. He himself, moreover, had sometimes the misfortune to strike a wrong note, even when playing in public."

Ries describes Beethoven's performance as being characteristic of his disposition—impetuous, forcible, and often indescribably expressive. Notwithstanding his freedom of manner, he kept very strict time, and very rarely hastened it. Sometimes, in *crescendo* passages, he retarded it a little, which always produced a surprising effect. Ries adds (and the remark ought not to be lost upon those, among ourselves, who play Beethoven's music) that when he performed his published compositions he played them as they were written, hardly ever introducing any notes of embellishment. But it was in extemporizing that Beethoven's genius was displayed in all its strength. Ries, who knew the first pianists of the time, and who must be considered a thoroughly competent judge, affirms that in this respect Beethoven was unapproachable. Woe to any one who dared to contend with him on that ground!

When the famous Steibelt arrived at Vienna, preceded by a brilliant reputation, much interest was excited by the expected competition between two such artists. It was at a musical party given by Count Fries that the two rivals met for the first time. Beethoven played his trio in B flat (Op. 11), which had not been previously heard, but is now among the most popular of his works. Steibelt listened condescendingly, and said some civil things, with the air of a man sure of his own superiority. He then played a quintet of his own composition, and afterwards extemporized, producing much effect with his *tremolo* chords, which then were a novelty. Beethoven was pressed to play again, but refused.

A few days afterwards Count Fries had another party. Steibelt, after having, with much applause, played a new quintet, began a brilliant fantasia, for which he took, as a subject, the Italian air which forms the theme of Beethoven's variations in the trio abovementioned. This was a pointed challenge; and Beethoven's friends,

sensible of its offensive meaning, urged him to take up the glove. Beethoven, not a little piqued at this defiance, got up and moved towards the instrument. Passing the music-stands, on which the parts of Steibelt's quintet were still lying, he took up the violoncello part and placed it on the pianoforte, turning it (either by accident or design) upside down. He then began to touch a few notes from the part before him, out of which he formed a subject; and, yielding to the inspiration of the moment, poured forth such a torrent of bright and beautiful thoughts, that Steibelt, confounded and overwhelmed, left the room before he had finished. From that night Steibelt avoided Beethoven's presence, and never accepted an invitation, unless he were assured that his rival was not to be of the party.

Notwithstanding Beethoven's kindness of disposition, he was excessively irritable; and the fits of passion to which he gave way at most unseasonable times, often exposed him to annoyances and mortifications. At one of his concerts he produced, for the first time, his fantasia for the pianoforte, with orchestral accompaniments and a chorus, which has of late been repeatedly performed in London. The clarinet miscounted eight bars; and, as it was nearly a solo passage, the blunder was the more apparent. Beethoven started up in a rage, and abused the band loudly enough to be heard by the whole audience. "Once more!" he at last exclaimed in a voice of thunder; and the band, overawed by his stern looks and commanding tone, submissively obeyed. The piece was now executed with perfect accuracy and great success; but no sooner was the concert over than the performers, indignant at the treatment they had received, rose against him *en masse*, and declared that they never would again play in his presence. Their anger, however, was of short duration. Beethoven having soon afterwards finished a new composition, curiosity got the better of resentment, and they were very willing to perform it under the author's direction. Another scene of a similar kind took place afterwards; but this time the orchestra, enraged beyond measure, persisted in their refusal to play under the direction of Beethoven; so that Beethoven, obliged to leave the room, and yet desirous to hear the rehearsal of his piece, was compelled to remain in the anti-room. It was a long time before the quarrel could be made up.

At a musical party at the house of Count Browne, where there was a large assemblage of people of fashion, Beethoven and Ries were to play a pianoforte duet. They had scarcely begun, when a young nobleman broke the general silence by talking to a lady who sat by him. Beethoven tried, by significant gestures, to stop this conversation; but finding himself unnoticed, he started up, pushed Ries's hands off the keys, and said loudly, "Für solche schweine spiel' ich nicht"—"I'll play no longer to such a set of hogs!" The confusion caused by this outbreak may be imagined. Anybody but Beethoven would have been turned out of the room; but he was a privileged man, and his rudeness was not only passed over, but he was requested to reseat himself at the instrument, which he obstinately refused to do. Ries was then asked to play a sonata,

but Beethoven forbade him to touch a note; and the scholar, fearful of the consequences of offending his master, durst not disobey his prohibition.

Fully sensible of the inestimable value of his instructions, Ries treated his master on every occasion with unbounded deference; but, with all his anxiety, he could not save himself from falling at last into disgrace. Beethoven, having finished a beautiful movement for the pianoforte, played it to Ries, who was so much delighted with it that he asked to hear it a second time. On his way home, Ries, passing the house of Prince Lichnowsky, went in, in order to tell the Prince of this new masterpiece. Remembering a considerable part of it, he played it to the Prince, who, being a good musician and having an excellent memory, was also able to retain a good many passages of it. Wishing to mystify the author, the Prince went to visit him, telling him he had come to let him hear a new *andante* which he had just composed. He began to play, and Beethoven was astonished to recognize his own composition. But his surprise speedily gave way to anger; for, remembering that nobody but Ries could have communicated this unpublished piece, he swore he would never again play in his presence, and he kept his word.

Some time afterwards the Prince had some musical friends to breakfast, among whom were Beethoven and Ries. The opera of *Fidelio*, then in rehearsal, was talked of, and the party agreed to adjourn to the composer's lodgings, to hear some parts of the score on the pianoforte. Beethoven accordingly sat down to the instrument; but, before beginning to play, desired that Ries should leave the room. Ries obeyed with tears in his eyes; but the Prince, justly displeased at such treatment, of which he himself had been the cause, expressed himself warmly on the subject. A sharp altercation ensued; and the matter ended by Beethoven rising from the pianoforte and refusing to play to the company, who separated much disappointed. It is painful to add that Beethoven's obduracy remained inflexible; and that, from thenceforth, though in other respects they continued on a friendly footing, Ries never heard him play a note!

Independence was Beethoven's *summum bonum;* and his excessive desire to preserve it unimpaired, made him reject civilities and services which most people in his circumstances would have gratefully received. At one time he accepted for a short while an apartment in the house of his friend Prince Lichnowsky, and the use of his table; and the Prince, knowing how jealously he felt any appearance of neglect, ordered his servants, whenever they heard Beethoven's bell and his own at the same time, always to attend Beethoven's first. But no sooner did Beethoven discover that such an order had been given, than he immediately engaged a servant at his own expense, though at that time he could ill afford it.

Though he was by no means attentive to the rules of politeness towards others, yet he was punctilious in exacting them towards himself. One evening he was invited to a *soirée* at the house of an old Countess, whose name Ries does not mention. Prince Louis Ferdinand of Prussia, one of the most distinguished amateur musicians of

his time, and an enthusiastic admirer of Beethoven, was of the party.* After the concert, the company went to supper in another room. Beethoven followed the guests, but found there was no place for him at table, the covers being laid only for the *noblesse* of the party. Irritated at this affront, he gave vent to his feelings in some pretty downright language, and retired abruptly. A few days afterwards Prince Louis Ferdinand gave a grand entertainment, to which Beethoven was invited. The old Countess, too, was present; but matters now took a different turn. When the company sat down to table, Beethoven was seated between the Prince and the Countess; a mark of distinction by which he was completely mollified, and so much pleased that he often talked of it to his friends. He was, indeed, more flattered by the marks of honour which he received from the great than might have been expected, from other parts of his character. When the King of Prussia sent him a gold snuff-box, he was very fond of showing it, and always remarked, that it was not an ordinary box, but one of those which were given only to Ambassadors.

He was totally ignorant of business and domestic economy. Constantly wrapped up in musical ideas, he knew very little of what was passing around him. At the same time, his deafness made him suspicious; he imagined he was imposed upon by people with whom he had dealings, and on such occasions the violence of his temper produced unpleasant scenes. He often had quarrels of this kind with the waiters of taverns and coffee-houses, whom he would abuse as thieves and pickpockets, and had then to make his peace by a handsome douceur. In places where he was known, people became used to his eccentricities, and gave him his own way.

Is was when he was deeply engaged in some great composition that his fits of absence and abstraction were most remarkable. At such times his household affairs, simple as they were, were wholly neglected. Having dedicated a work to Count Browne, that nobleman, as a mark of gratitude, made him a present of a handsome horse. Beethoven was fond of his acquisition, and for a time rode out every day: but some musical occupations put a stop to his horsemanship, and he soon forgot altogether that he was the owner of a horse. His servant took care of the forsaken steed, and turned his master's forgetfulness to good account, by letting out the animal at so much a day and pocketing the hire. Beethoven knew nothing of the matter, till he was surprised by the appearance of bills for hay and corn, which he had to pay. He immediately got rid of the horse, but we are not told that he also got rid of his trusty domestic.

He had a passion for changes of residence. No sooner was he settled in a lodging than something about it displeased him, and he removed to another, often forgetting to give notice of his intention to quit—an oversight which sometimes got him into awkward scrapes. At one time he had four different lodgings on his hands,

* Prince Louis Ferdinand produced several musical compositions of great merit, particularly a set of beautiful trios for the pianoforte, violin, and violoncello, which are known in this country. He was killed at the battle of Jena.

all of which he had to pay for. This affair occasioned a quarrel with one of his oldest friends, whom he accused of having undertaken to give one of these notices, and of having failed to do so. The estrangement lasted for some months, till, meeting by accident, matters were made up. Beethoven's suspicious temper made him prone to quarrel with his friends. If he took any offence, instead of explaining himself frankly, he became so cold and reserved, that it was difficult to discover what was his ground of umbrage; but if once an explanation took place, he was very ready to confess himself in the wrong, to express his regret, and endeavour to make amends for his error.

In his movements and gestures he was very ungraceful, and clumsy and awkward in every thing he did. He seldom took anything up without letting it fall, and often broke valuable artlcles. When writing at the pianoforte, he would overturn the ink glass upon the instrument. In shaving, he used to cut himself unmercifully, but he never would allow a barber to perform this operation. Ries adds another remarkable circumstance—he never could learn to keep time in dancing.

We have already said that Beethoven was flattered by the attentions of the great, but he would never descend to adulation, or pay homage to any one whom he conceived to be unworthy of it. A remarkable instance of this nobleness of spirit is mentioned by Ries, in whose words we give it:—

"In 1802, Beethoven, then residing at Heilingstad, a village near Vienna, wrote his third symphony, known under the title of the *Sinfonia Eroica*. Beethoven, in composing, had frequently a definite object in view, though he sometimes ridiculed descriptive music, especially when it professed to paint objects minutely. Haydn's *Creation* and *Seasons* were often the objects of his sarcasms, though he always acknowledged the general merit of that composer. In the symphony in question, Beethoven had in view Bonaparte, then First Consul, whose character, at that time, he greatly esteemed, and whom he used to compare to the most celebrated Consuls of Rome. I myself, and many of his friends, have seen on his table a fair copy of the score, with the word "Bonaparte" by way of title, and his own name, *Luigi van Beethoven*, at the bottom of the page. There was not a word more, and I do not know whether the blank space between the names was to have been filled up. I was the first who brought to him the news that Bonaparte had declared himself Emperor. He listened indignantly, and exclaimed,—'He is a mere ordinary mortal after all! He is going to trample all the rights of man under his feet, and to become a tyrant, to gratify his ambition.' So saying, he took up the symphony, tore the title-page in pieces, and threw it on the ground. The first page was recopied, and the piece received the title of *Sinfonia Eroica*."

Beethoven's friend, the Chevalier Leyfried, gives the following account of his musical opinions:—"Beethoven, unless in the small circle of his intimate friends, did not allow himself to express his opinions of other musicians. He regarded Cherubini as the greatest living dramatic composer, and Handel as the master of masters,

considering his limited means and great effects. Mozart's *chef d'œuvre*, he thought, was the *Zauberflöte*, because, in that work, Mozart was thoroughly German, while *Don Juan* was too much in the Italian style, and Beethoven conceived that so scandalous a subject was degrading to the art. In regard to several other celebrated composers of the time, he was severe as well as unjust in his opinions. He never could perceive the merit of Weber and Rossini." Among all composers (as we are informed by Ries), Handel and Mozart were those whom Beethoven esteemed the most, and, next to them, Sebastian Bach. If he had music in his hands, on his table, or on his pianoforte, it was sure to be some masterpiece of one or other of those great composers.

Beethoven was all his life in narrow circumstances. It is well known that, a short time before his death, he applied for and received pecuniary assistance from the London Philharmonic Society, though it turned out that he had died possessed of money and effects to the amount of something less than 1,000*l.* sterling. The good people of Vienna chose to be much displeased that Beethoven should have had recourse to English generosity for aid at a time when he was by no means in want of it. Had he needed pecuniary assistance, they said, he ought to have made his situation known to them, and not to foreigners. But, notwithstanding this fine talking, it is undeniable that these same Austrians permitted the greatest of their musicians to live among them in a state of penury of which they could not have been ignorant—a fact which is now sufficiently established by Beethoven's own letters. Who can read unmoved such passages as the following?—

In a letter dated 22d November, 1815, accompanying several compositions sent to Ries for publication in London, Beethoven says—

"I pray you earnestly, my dear Ries, to push this affair, that I may get the money; I have great need of it. I have lost 600 florins of my yearly pension. I pay 1000 florins of rent, and you may conceive the hardship which arises from the excessive depreciation of paper money.* My poor brother Charles is dead: he had an unthrifty wife, and had for some years been consumptive, and I may say that in helping him I have spent 10,000 florins; no great matter for an Englishman, but a great deal for a poor German. My poor brother was much changed in his latter days; but it is now a great satisfaction to me that I did all I could to preserve his life."

In a letter of the 8th March, 1816, Beethoven says—

"I am late in answering you, but I have been unwell, and very busy. I have as yet got no part of the ten gold ducats, and I begin to have doubts of English generosity. The Prince Regent, too, has not even reimbursed me for the expense of copying the *Battle Symphony*, which I sent him, nor have I even received a word of thanks for it. My pension is 3,400 florins in paper: I pay 1,000 florins of rent; my servant and his wife cost me 900 florins; so you may calculate how much I have remaining. I should be very glad to be employed to write something for the Philharmonic Society."

* At this time the florin was worth less than a shilling English.

In April 1819, Beethoven sent Ries a sonata (op. 106) to be sold to a London publisher. His letter concludes thus:

"This sonata was written in very painful circumstances. It is hard to have to write for daily bread, and this is my situation at present.—As to my journey to London, we shall speak of it another time. The only salvation for me would be to get out of this unhappy and distressing position, in which I cannot recover my health, nor do what I might do under more favourable circumstances."

The money which Beethoven expected for this sonata not having arrived, he wrote again, on the 25th of May—

"Never have I been in such embarrassment, and all through the benefits I have lavished on other men. Do not forget the quintet and the sonata—nor the money for them; I mean *the honorarium, with honour, or without.*"

Lastly, in a letter of the 5th of September, 1825, Beethoven says—

"If I were not so poor, and obliged to live by my pen, I should ask nothing from the Philharmonic Society; but, in the situation in which I am, I must expect the price of my symphony."

These affecting passages afford evidence, only too ample, of the unhappy circumstances in which this illustrious man passed his days. If he did contrive, in a life of toil and privation, to scrape together the pittance of which he died possessed, what is that to the purpose?—Fallen into the vale of years, with broken health and decayed powers, was his possession of the means of existence for two or three years sufficient to dispel the "thick-coming fancies," the visions of penury and destitution which haunted his mind? And could he reasonably expect sympathy, or effectual aid, from a people from whom he had met with nothing but indifference and neglect?

"Germany," to use the language of a recent work,* "though a musical land, is far from being, as is very commonly supposed, the paradise of musicians. Mozart struggled all his life with difficulties, and was obliged to toil incessantly, not for fame, but for daily bread. His widow was saved from destitution by her second marriage with a respectable man, who became, too, a father to her dead husband's children. His sister, the celebrated girl who shared the triumphs of his childhood, and whose name is for ever associated with his memory, died a few years ago in old age, and in such extreme penury that she was actually supported by charity. Beethoven lived unpatronised by the great and neglected by the public, barely able to subsist by a life of labour and parsimony, unknown and unheeded among his countrymen, even while his great name was resounding through Europe, and all because his transcendant genius was unaccompanied by the suppleness of the courtier and the arts of the man of the world. Let our musicians think a little on these things before they join in the common cry against their own country, and repine that 'their lot was not cast in the pleasant places' of Germany."

* Memoirs of the Musical Drama.

MODERN TASTE IN FEMALE FORMS.

Is this a Corset that I see before me,
The lacing tow'rds my hand? Come, let me clutch thee!
I love thee not, but yet I'd loose thee still.
Art thou not, fatal Corset, sensible
To feeling as to sight? or art thou but
A Corset of the mind—a false creation
Proceeding from the *ton*-oppressed brain?
I see thee yet, in form as palpable
As that which now I draw!—

We think it might be submitted to a committee of artists, without any doubt of the unanimity of the decision, as to whether the beauty of the female form is not materially injured when subject to the accidental circumstance of a wooden leg; particularly on a windy day, while draperies display rapid mutations of design in flowing and clinging varieties. Surely nothing could well convey an idea more opposite to our general impressions of beauty, tenderness, and symmetrical grace. Perhaps the palm of unsightliness might be disputed with the above by the appearance which would be presented by a Hottentot lady indulging in a social game at leap-frog with her nephews and nieces during a heavy shower of rain, when shawls and sashes are apt to become shapeable; and this superior condition of ungracefulness, if not enhanced, might certainly be rendered more preposterous to an artistic eye if the shower in question resembled that which took place in Gotzberg, where, as we are seriously informed by Thuanus (*Historia Sui Temporis*), it once rained peas,

radishes, and moist corn. These things, however, are circumstantial and involuntary departures from nature. They are anomalies and deformities not dependent upon individual will or caprice. They are occasional, accidental, and unstudied; not habitual, fashionable, and systematic perversions. The supererogations of the Hottentot and the leg of wood may be ugly and ridiculous, but they do not assume perfection and court universal admiration. If they suggest a monstrosity to others, they do not think themselves angelic notwithstanding; and however they may annoy the eye of the beholder, they undoubtedly produce no further injury to mankind at large. Whatever may be thought of the figures just presented to the reader's fancy, they are manifestly equalled by the majority of those which represent the modern taste in female forms, than which, at their highest pitch of fashionable perfection, nothing can be more grotesque and anomalous. They stand in the same relation to the human, that a shower of green peas and radishes does to the vegetable world. They are not merely the opposite of desirable perfection in themselves, but should be studied only as models of everything in symmetry that ought to be avoided; because it produces mischievous effects upon the constitution individually, while it lays the sure basis of injury to future generations.

If the natural beauty of the female form depended upon the corset-maker, milliner, and dressmaker, we have demonstrable evidence of the extraordinary change which would gradually ensue in creation. The appearance of the human being is already at wonderful variance with the primeval construction of things; but this appearance we know to be forced and fictitious, and that the original bias, however warped and attenuated, remains precisely the same as originally intended by our Maker. The consequences of this unconquerable and irrepressible tendency to nature are worthy of most serious consideration, not only by the parties *most* concerned, but by all those who imitate their perverted appearance in various degrees, and all those who feel an interest in the health and strength, no less than the natural beauty of humanity.

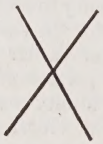
That a vast number of our artists, though few perhaps among the finest, do absolutely "follow the fashions," we have but too many public attestations. This is indeed a fatal sight. When a class of individuals, or a large majority of that class, agree in the adoption of an habitual fallacy, knowing, as they must, better than all other classes, (except the medical prefession,) the extent of this fallacy, with distinct reference to health, beauty, and the truthfulness of things, nothing can more strongly show the wide-absorbing influence of the public perversion, thus enhanced by the re-action and reflection of its own errors from the obedient mirrors of that very class which should more especially hold the true *model* up to view, and recall mankind to a perception of real beauty and truth. Instead of this, an equally erroneous and monstrous idea of perfection is propagated with sedulous and systematic appeals to misguided vanity; and the rising generation of females, being trained from childhood both to believe in and to suffer by this prevailing fallacy, are no more aware of the fact than of its consequences, and resign themselves to the attenuated malformation with a full faith in its assumed beauty, and in the necessity of all they suffer for its attainment.

The present false theory of form (for nature has been traduced by

many varieties of *improvement*) was originated by French corset-makers, milliners, and other *artistes;* propagated by mistaken vanity, established by fashion and habit, and encouraged, flattered, and fixed by the majority of artists,—from the fluttering pencils devoted to the "magazines" *des modes,* to the fashionable portrait-painters, and the glittering cluster of "stars" and "garters," redolent of inanity, in the gilded Annuals. We shall take a passing glance at three of the lunations in received ideas and popular tastes in female form, which have characterized our own country—a country famed above all others for its gravity, good sense, and love of honest substantial reality. Let us revert to the set of dolls, known as "King Charles's Beauties," with whom, together, of course, with all the ladies of the Court, nothing was considered so divine in voluptuous sentiment and suggestion as a body set up in a sugar-loaf case. Where the natural formation had an uncontrollable and rebellious tendency to a certain breadth and roundness, the sugar-loaf was compromised for the shape of a wine-glass; and this latter appearance, indeed, was at an earlier period considered the most desirable, as we may see in the portrait of Queen Elizabeth, while the narrower condition of suffering beauty was reserved for the handing down of Sir Peter Lely and Sir Godfrey Kneller. The graceless, ugly, unfeminine, bolt-upright, hard, sugar-loaf torso, was, however, completely broken up by the beautiful Lady Charlotte Campbell, who, feeling the full extent of the restraint, simply because she possessed a natural, lovely symmetry, boldly set the long sugar-loaf at defiance, and, to the dismay of all her fashionable friends, actually wore the waist of her dress exactly in the situation where nature originated the opinion of its proper place. But as fashion delights in extremes, the natural waist was soon considered not short enough as a contrast to the previous extravagances of length. An opinion consequently arose, that inasmuch as the female torso had been represented to the ultimate possibility of tapering length before the eyes of an admiring world, and that there had subsequently been manifested an abominable disposition to display an exterior far too near the form of nature to be good for anything in the way of novelty, so it behoved all those people of rank who keenly felt the importance of distinguishing themselves from the vulgar body, to institute a thorough change in the mistaken dispensation of Providence. Accordingly the order was given, and presently the female waist totally disappeared from the animal economy of all people of superior condition. The band of the dress was carried up close under the arms; and as there was no waist visible, so there could be no back, the distinction between the shoulders behind, and the long lower part sweeping straight down, being simply indicated by the interesting and touching intervention of a little padded hump. No lover, unless perhaps on the very brink of marriage, could therefore venture to place one arm round the waist of his adorable without risking the charge and penalty of a terrific breach of decorum, because it did not appear that the lady *had* any waist, and what could the poor man do? Yet this state of affairs was considered perfection; and dress-makers worked incessantly in the good cause, and artists multiplied the ladies "in long clothes" *ad infinitum.* Let us endeavour to imagine one of these long, straight-bodied ladies to be suddenly brought to life at the present time. Within a month she would

be as like a balloon as the rest of the *haut-ton!* Such is the power of fashion over externals, and such the changes which we are successively called upon to believe as indicative of the perfection of beauty underneath! But how can we believe in anything after such changes?

All the foregoing perfections are now voted horrid frights—are utterly exploded, not without some doubts whether such things were ever really prevalent and admired; and an opposite kind of excellence is substituted, which is also doomed to explode, the greatest wonder being how this anomaly should be so long in bursting its confines, and giving breath and fair play to its panting victims. The foundation of the present false theory of perfection in the female form may be expressed by a very simple diagram.

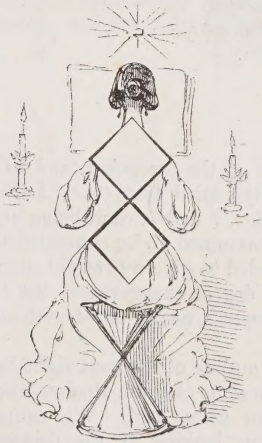


The principle of this mischievous idea is contained in two lines crossing each other at angles, a little more or less acute, according to the height of the individual. The demonstration of this equally eccentric and common-place problem is easily obtained by a trifling addition, suggestive of elegant patronesses.

We think the truthfulness of the above diagram speaks for itself. It cannot be necessary to offer a single argument in support of the close resemblance of this first principle to the existing state of things in the highest degree of the fashion. There is undoubtedly a difference between our diagram and the living figures in question; but that differ-

ence is manifestly no more than can be found between Nothing and the Least possible.

In short, the utmost perfection of the female form seems at present to consist in the attainment of that sort of figure which might be cut in two by a switch cane, an impression as little consonant with all ideas of beauty as of durability. The same false principle is, however, observable in all the variations of the species, whether the angles be acute or obtuse, and the lines quite straight or fantastically waved, thus presenting an endless succession of amusing forms, such as *diamonds, dumb-bells, balloons, flower-vases, wasps, pears, and other fruits, legs of mutton, musical instruments, the letter* X, *hour-glasses, &c.*



In our course through the present subject we shall give diagrams of most of the above-named curious fancies, in which the minds of the leading-and-following ladies of fashion have been pleased to indulge, in order, it may be presumed, to lead the other sex thoroughly astray as to the real intentions of Nature, and to confuse, no less than astonish, our excited

imaginations by the changeful suggestions and fascinations of extraordinary and unexpected associations. In attempting to embody and illustrate some of these, both by words and diagrams, we shall be extremely careful to adhere most strictly to the facts now passing in the world before us; and if it be thought by many people, as by ourselves, that these appearances are wicked libels and caricatures, we can only say, *such are the facts:*—join us, therefore, in bringing your "action," with your most just accusation, against the Corset-makers, the Milliners, and their Tutelary Geniuses and Patronesses, with a view to improve the health and happiness of many sufferers and victims, and to restore to the world the real beauty of the Female Form. The outline by the side of this elegant anomaly represents the peculiar figure underneath, which, we presume, the external appearance is intended to suggest.

The dressed figures of the foregoing, and of the ensuing diagrams, are *fac similes* carefully copied from the 'Ladies' Gazette of Fashion' for August, plate II, *figs.* 7 and 9, each being accompanied by an outline of the figure which is assumed to be concealed beneath, or of which the external dress is intended to give a graceful suggestion. So far from its being in the slightest degree exaggerated, the example from which it is copied, is, in certain respects, nearly one-fourth more extensive in elaboration of the error.

The "unadorned" outline of the next right-hand figure bears a considerable resemblance to some of those shadow-like effigies standing against the walls of Egyptian sarcophagi. We cannot possibly avoid these kind of suggestions on looking at the dressed figures, which, however, are in almost every instance drawn a degree less extravagant than those "originals" from which they are copied, as anybody who will take the trouble to refer to the books in question will instantly perceive. Although they are not of the species of humble humanity, it must, nevertheless, be evident, from the peculiar refinement and "keeping" in the Idea they impersonate—in fact, the consistence of the inconsistency

—that there really *might* be some planet inhabited by beings of this description.

How hard, meagre, attenuated, unsuggestive, in short, how *poor* a figure would a "man" present beside one of such a class as the above! Let the apparently unfortunate, defrauded, and humiliated male sex recover courage by the contemplation of a *torso* of the real form and loveliness of woman. That it has ever been subject to the sad complaint of the "tumour" and the "withered waist" is most sincerely, reverently, and deeply to be deplored. The next diagrams are copied from the antique; and we would humbly suggest that any person who still entertains any doubts as to the true female form which Nature has thought "best for all parties," should take one of the 'Books of Fashions' to the sculpture room of the British Museum, and judge for himself.

We have expressed our opinion as to the extent to which the great majority of artists have encouraged and flattered these notions of form, which they, of all men, must have best known to be of the worst class of falsehoods. We say they must have known this best, because it is their business to know, not only how false these appearances are anatomically, but how opposed to all true principles of the Ideal, which

requires to be based on substantial reality, and on the most refined associations of pure nature. In these denunciations, however, of the defalcation of artists, who have thus forgotten their high calling to pander to the current fallacies of the shifting time, we are most ready and anxious to admit the existence of honourable exceptions; men who have sought to check the imposture by resolutely persevering in the regular course of nature, amidst all the progressive lunations of absurdity; and by far the greater number of these exceptions, we are bound to admit, will be found among the sculptors. The substantiality of the material they work with, seems to have communicated solid and unfluctuating impressions of truth, and saved them from liabilities to be fashionably seduced to run after "false gods" by the meretricious charms of colour, the imperceptible gradations of floating shades, and the "golden" lights that glitter and destroy—smiling like the heaven of fame, but leading to certain darkness and oblivion.

Amidst the distressing and injurious results consequent on the ever-varying yet continual attempt to change the order of Nature in respect of the human form, the medical profession has not been silent. In most works of authority on the subject of bodily construction and the preservation of health, we find the systematic perversions of fashion loudly denounced, and the train of diseases or injuries they induce duly exposed. Notwithstanding what we may term the hereditary mischief of the Corset; with the use of it commenced at an early age—whereby we are continually made to shudder at the fearful sight of a delicate girl of ten or twelve years of age with a steel busk biting into her breast-bone, and a corresponding suit of stay-armour for the ribs, with a view to force the premature appearance of "a figure"—we still find the ineradicable energies of nature at work within; but, being constantly checked in their right action, resenting the suppression by external distortions, destructive to symmetry and grace, and generally at the same time by internal distortions, which strike at the very foundations of life.

"The free and easy expansion of the chest," says Dr Combe, in his 'Principles of Physiology,' chap. 7, "is obviously indispensable to the full play and dilation of the lungs: whatever impedes it, either in dress or in position, is prejudicial to health; and, on the other hand, whatever favours the free expansion of the chest, equally promotes the healthy fulfilment of the respiratory functions Stays, corsets, and tight bands, operate most injuriously, by compressing the thoracic cavity, and impeding the due dilation of the lungs; and, in many instances, they give rise to consumption. I have seen one case in which the liver was actually indented by the excessive pressure, and long-continued bad health and ultimate death were the results."

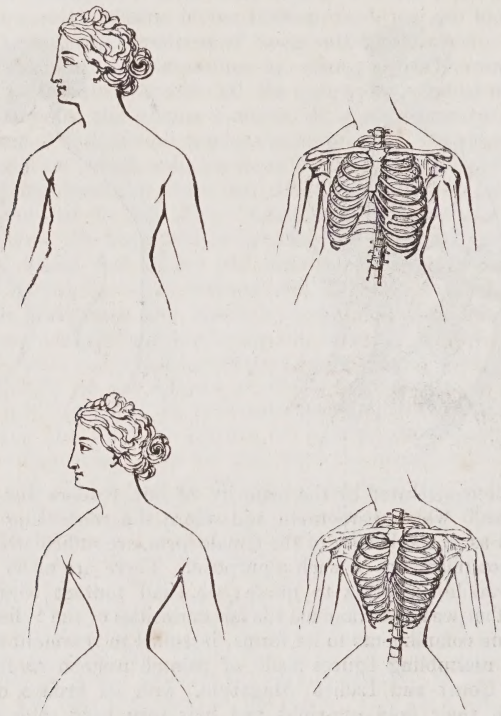
When John Kemble went to see the Hottentot Venus, she fell in love with his noble figure. We do not mean this as a jest; she really did, and graciously desired her interpreter to express to the great classic tragedian the sentiments she entertained. This circumstance occasioned much merriment among Kemble's friends, but he was quite unable to sympathise in the humorous suggestions they originated. The only feeling he experienced was that of extreme pity. "Poor creature!" said he, "to think that such an affliction should be made a public show—a public amusement!" Our next figure is accurately copied from

Townsend's 'Monthly Selections of Parisian Costumes' for last month, page 812, left-hand figure at bottom of the plate.

It may be conjectured by the majority of our readers that the books of "fashions," which perpetuate and adorn the misleading ideas now entertained as to the beauty of the female form, are sufficiently numerous for the accomplishment of such a purpose. There are many more than we shall trouble ourselves to quote; we shall content ourselves with observing that we have examined the fair curiosities of the 'Beau Monde,' and paid due compliments to its forms, intended to represent the human, but closely resembling figures made of painted pasteboard, faded in the sun; the 'Court and Ladies' Magazine,' with its groups of Chinese ladies, with their gold ear-rings and hair torn back so as to give the effect of a beautiful baldness; the 'Blackwood's Lady's Magazine,' where the unfortunate fair ones seem fixed in a state of rapture after a snow storm, or as if attired in elegant filagree shrouds; the 'New Monthly Belle Assemblée,' where some of the amiable monstrosities are put into half-mourning; and the 'World of Fashion, or Magazine of the Courts of London and Paris, now Conducted under the Auspices of a Committee of Ladies of Rank and Fashion, and of Popular Authors!' Of this last-mentioned angelic guide and illustrator, nothing more need be said but that its contents resemble all the others, with the advantage of a *soi-disant* portrait of Lady Seymour as the "Queen of Beauty," whose form, as it is here represented, will find a fac-simile in the "fatal Corset" placed as a vignette at the commencement of this article.

Dr Soemmering has recorded his view of the fact, and the consequences of this modern taste in female symmetry, by two diagrams—the one representing the Venus de Medici, with her natural skeleton; the other of a fashionable Venus, with the diminution of room for vitality, consequent on "the improvement." Similar diagrams were given, though with a very coarse execution of the engraving, in the 'Penny Magazine,'

some six years ago, and accompanied with a very useful and praiseworthy article on the subject.



With reference to distortions, both external and internal, we shall have occasion to offer sundry remarks. It is, moreover, to be observed—a circumstance we shall not forget—that, in all the vagaries of fashion, those adopted by the male sex are continually copied from the external appearance presented by their fair deceivers. This must, however, be deferred till next month, when we hope to show, both by precepts from the highest medical authorities and by illustrations copied exactly from the "figures of the day," that the false principles of taste, against which we have been directing our remarks, not only destroy the real beauty of nature, but directly tend to limit and enfeeble the vital strength and health of the community at large, and as directly tend to shorten the duration of life.

THE UNIVERSAL PENNY POSTAGE.

The eyes of the world are now directed towards this country with the view of watching the great experiment about to be made in Post-Office Reform; and it is not too much to predict that, should it turn out to be successful, a vast change in the political and social condition of mankind will be the result. The scheme is consequently regarded by those who are opposed to any further progress of liberal institutions, and political enlightenment, with a feeling of dislike proportioned to their horror at any new-fangled "innovation;" while, on the other hand, the advocates for universal instruction see, in the "universal" penny post, a gigantic means of overcoming hitherto insurmountable difficulties. From these antipodean parties opposition or support will come in the shape of violently expressed opinions; but, as in most cases truth lies midway between extremes, there is no reason to think that the present occasion will form an exception to a general rule. We may, therefore, safely venture to discard from one view of the question all those mysterious fears with which the opponents of the measure would hedge it round; and from the other, those grandiloquent statements of anticipated increase of revenue, which have their origin rather in the wishes of the persons who make them, than in any common sense examination of the whole merits of the case.

The history of taxation does not contain the record of a fact so startling in its nature, or so bold in its novelty, as the scheme of levelling all hitherto existing various rates of postage to one uniform charge of a penny upon every half-ounce letter. No fiscal reform ever promised such extensive and (to be hoped) beneficial changes as the contemplated adoption of a low and uniform rate of postage offers to the acceptance of society at large. It is a boon wrung from the late Chancellor of the Exchequer by the universally expressed voice of the whole kingdom; granted by him and the Parliament, it is true, with sundry misgivings, and moreover a *pledge;* but still "granted;" and it behoves the country, therefore, to see that the "boon," be it of what value it may, is not shorn of its fair proportions by any lame administration of first principles, or by the adoption of second-best principles when "first" are at command.

When we speak of "first principles," it must be understood that we refer only to their application to the actual working of the new speculation. We are not about to enter upon any inquiry touching the probabilities of success or the possibilities of failure which attend it. The act of parliament which fixes a uniform penny rate is passed. It will come into operation shortly; and any examination into the statistical and other reasons which induced the legislature to respond to a national call, would only appear in an *ex post facto* and therefore useless character. Indeed, if we had an inclination to indulge in any such examination, we are saved all the trouble of gratifying it by referring our readers to the "Post-Office Reform" article which appeared in the *Quarterly Review* for the month of

October. In this chivalric, not to say Quixotic attack, upon those false Knights of the Exchequer who think they see in the new system an amount of general advantage which belongs not to the old, the author has not forgotten to make use of a spear long enough to vanquish windmills. The goodly columns of the *Quarterly* are occupied to the extent of *sixty-four* pages with as many dozens of fantastic reasons against the adoption of Mr Rowland Hill's plan, some of which are funnily enough directed against the cheap spread of "sedition, privy conspiracy, and rebellion," by means of *cheap* postage. The Quarterly Reviewer's article is, in fact, a long sixty-four pounder, loaded to the muzzle with hobgoblins of every colour—

"Black spirits and white, red spirits and grey,"

and then discharged, grape and canister fashion, at all ranks of Post-office reformers, from Lord Melbourne down to the six-o'clock bellman. The "white" spirits, however, bear but a very indifferent proportion to the "black," for with the dark shade of unworthy motive the writer has surrounded almost every advocate of reform in the Post-office revenue and administration. He asks, with considerable *naiveté*,—

"Was the Committee ignorant—we think not—that the radicals in politics, and the sectarians in religion, have been the warmest advocates—and indeed (except the mercantile body) the *only* very zealous advocates for this penny post? The reason is obvious, because at present such parties cannot circulate their venom without some kind of machinery and agency. Through the safe and sacred medium of the post-office, an illegal society may not only affiliate itself, without possibility of interruption or detection, with similar societies in different quarters, but may *force* their incendiary publications upon parties who had never before heard or thought of such mischief: nor is the power that would be conferred of organizing with celerity and security the simultaneous *movements* of the population in distant districts to be wholly disregarded; and on the whole we feel that, so far from the *exclusive* benefits to '*order, morals,* and *religion*,' which Mr Hill and the Committee put forward, there is, at least, as great a chance of the contrary mischief, and that the proposed penny post might perhaps be more justly characterised as '*Sedition made easy.*'"

We have seldom read such sheer nonsense as this. "Sedition made *easy*" by a cheap rate of postage! Bah! So novel an arrangement of cause and effect has not been made known since the "Old Man of Kent," accounted for the connexion between Tenterden Steeple and the Goodwin Sands. For a moment we take leave of this party and splenetic tirade; but in the progress of our observations we shall have occasion to refer to the author's statements, sometimes with a view of corroborating our own, but more frequently with the object of proving him a one-sided advocate.

To return then to our "first principles;" let us ask what they are, and how best to be applied. In instituting this examination we shall take the bull by the horns, and not by the tail, as our Quarterly Reviewer has done.

The whole question of Post-office administration upon the new plan resolves itself into three grand elements, namely, Uniformity; the cheapest mode of *securely* collecting the Postage; and Public Convenience.

"Early in 1837, Mr Rowland Hill—originally, we understand, a schoolmaster, and afterwards secretary to the South Australian Commission—observing that the Post Office revenue had remained stationary while the population and all other measures of public prosperity had greatly increased, and attributing this fact, as had been already done by some competent authorities, to the excessive rate of the postage; observing also that the charges of management bore what he thought a very great and excessive proportion to the gross revenue—and finding, according to his calculation, that the actual cost of the conveyance of letters was infinitely small as compared with the rates of postage—Mr Hill, we say, imagined a scheme for *sweeping away the whole of the financial and account branches* of the Post Office, and reducing its duties to the mere mechanical functions of receiving, conveying, and delivering letters, of which the postage should be collected by anticipation, at the Stamp Office, by means of a stamp to be affixed to the letter at the uniform rate of one penny."

We have made this extract for the purpose of stating that against so much of Mr Hill's plan as is involved in the "sweeping away the whole of the financial and account branches" of the Post Office, we entertain an unqualified dislike. The stamped-envelope system —indeed any stamp system whatever—is open to many serious objections, and so is every plan whose object is to transfer the collection of the Post Office revenue to the Stamp Office. Our reasons for the opinions we hold on these subjects will be found in another place. Meanwhile, we beg our readers to recollect that the whole of our statements and arguments are based upon a conviction that the Post Office will be quite able to economically collect its own revenue in *money*, by pre-payment, with the greatest possible convenience to the public, and without the interference of the Stamp Office, for which, in fact, there is not the remotest occasion, as we shall prove by and bye.

And firstly, as to UNIFORMITY; which, to be effective, must be *strict*. On this point we shall begin by quoting a few lines from the article in the *Quarterly*:—

"We cannot give a stronger instance of the impossibility of carrying the principle of uniformity into practice, than to state the clumsy and absurd shift by which in one very important class of cases Mr Hill endeavoured to overcome the difficulty. His principle being that all letters should be *pre-payed* at the rate of 1*d.*, and distributed mechanically without further demand or delay, it was asked how foreign letters, arriving in England, and already charged with heavy postages, were to be dealt with? This was a puzzler."

Was it? If it puzzled Mr Hill, or those who asked him the question, it would not have puzzled a fifth-rate clerk in the Post Office. "Puzzler" indeed. Why? Is there any difficulty in preventing foreign letters arriving in England charged with "heavy," or with *any* postages? We should think not; we undertake to say there *is* not; none whatever. The largest proportion of foreign letters are received and sent *via* Calais. Let but the English government give to the Paris Post Office a notice of its intention to deliver at Calais, *English postage free*, all letters going that way to the Continent from England, and arrangements will instantly be made on the other side of the water for the Frenchmen to charge the receivers with their own postages from that port; and let it be further announced to the same authorities that all letters from their side of the Channel must be received *pre-payed* at the rate of one penny each, and without any claim for foreign postage, and we will undertake to say that this charge (in addition to their own) will be

readily and very willingly collected by the French government, to be aftewards paid over to the English Post Office. This, however, is part of a general plan for the collection of the postage revenue without the intervention of any *stamp* whatever, the absolute non-necessity of which we shall presently prove under its proper head.

What then becomes of the "puzzler" that staggered Mr Hill? Is there any difference between forwarding letters to Calais and to Liverpool? Is there any distinction? To be sure there *is* a "distinction," because letters going to Calais must be sent by water in a steam-boat, and those to Liverpool by land in a mail-coach; but this is "a distinction *without* a difference." There can be no greater difficulty in previously collecting a penny each upon a thousand letters, to be packed in a bag and sent by a steamer to Calais, than there is in stowing the same number away in the boot of the Edinburgh mail after similar *pre-payment*. The only thing to be done is to make the necessary preliminary arrangements with the French government, and all will go like clock-work. We must, however, again beg our readers to remember that this method is perfectly incompatible with the use of any *stamp* whatever as an indication of previous payment at the Stamp Office. The whole business both with foreign parts and home departments must be transacted in ready money by the Post Office itself; a plan, the advantage of which, in place of the proposed stamps, we shall, as we have just announced, point out and support with convincing, nay, overwhelming reasons. Until we come to this part of the subject we beg our readers to go along with us in putting the envelope stamp totally out of consideration, and remembering that we only speak of prompt payment in the coin of the realm.

Let us take a case by way of illustrating the statement we have just made, as to the practicability of putting foreign and English letters exactly on the same footing.

Suppose a person were to take forty-eight letters to the London Post Office to be forwarded to Paris, he would be charged twenty-pence each, or a total of four pounds sterling, half of which would be retained by the English Post Office for the carriage of the letters to Calais, and the other half would go to the French Post Office as the charge for their subsequent transit to Paris. But by the proposed new arrangement he would only have to pay in London one penny each, or four shillings for the whole, instead of two pounds, for which sum the English Post Office would deliver them at Calais, thence to be forwarded by the French Post Office at the charge of the receivers.

Suppose, again, a person were to take forty-eight letters to the *Paris* Post Office to be forwarded to London; he would there have to pay, under existing arrangements, the whole charge of postage between the two capitals, namely, *two* francs each, or a total of 960 francs (equal to *four* pounds sterling), of which half would be retained by the French Post Office, and the remainder paid to the English; but by a new arrangement which might, and indeed *must*, be made, he would have to pay only *one* franc upon each letter, or a total of 480 francs (equivalent to *two* pounds sterling) for postage

to Calais, with the additional charge of one penny (ten centimes) each for their subsequent transit to London. The pennies thus received by the French government would have to be paid over to the English Post Office, in the same way that the collection is to be made from the various postmasters at home, and of which we shall have to speak presently under its proper head.*

Now what becomes of the "puzzler" that upset Mr Hill? You "mouse" of a Quarterly Reviewer, is it not "a mountain in labour," &c.? We are ready to admit, that if Mr Hill tied himself to a plan of pre-payment by means *only* of a stamp, he must have been sorely "puzzled" at the question. But did that gentleman and his collaborateurs never reflect upon the possibility—nay, the *facility*, of carrying out the principle of a uniform pre-payed penny post without the assistance of any stamp whatever, but merely by the payment beforehand of hard cash? It appears not; neither does it appear that the Quarterly Reviewer himself ever once thought of it, great as is his capacity for finding fault on the one hand, and suggesting alteration, if not improvement, on the other.

It may be urged, that if the plan here proposed with respect to foreign letters were adopted, there would exist this anomaly in practice; that whereas a person in France who transmitted a letter to London by the post, would be compelled to pay the postage for the whole distance, the contrary would be the case with a person who forwarded a letter from London to Paris, inasmuch as the latter could *not* pay the postage for the whole distance if he would. This we admit to be true; but what will be the amount of actual grievance? Very little, if any. It is well known that ninety-nine out of every hundred foreign letters *to* and *fro* are of a *commercial* nature; and it is equally well known that merchants and others engaged in commerce make the amount paid for postages an item in their invoices, accounts of sales, or accounts-current. With this class there will be no difficulty whatever; the only cause for complaint will rest with those few who have an object in franking the whole way. But neither human means nor human ends are perfect, and there never yet was a great general benefit which did not involve in its details some remote individual hardship. What the actual amount of this particular "hardship" would be, it is impossible for us to say; but we are sure it is much too small in the scale of public advantage to entitle it to any weight whatever.

But there are deeper considerations attached to this matter than those which belong to any supposed grievance of the nature alluded to, were it of a hundred-fold greater extent than it ever can possibly be. How long will France be in following our example by reducing her own rates of postage, and adopting the plan of universal pre-payment? And, after her, how long will it be before the other great states of Europe pursue a similar course? *We* ask the question;—time will shortly answer it. We have only to direct atten-

* If it be objected, that the charge of sea-borne letters is too heavy to admit of this arrangement without loss, we reply that the cost of transporting letters by the steamboats is much less than by the mails.

tion to continental railroads to prove that the French, the Dutch, the Belgians, and the Austrians, are no laggards in the race of utility.

We think we have said enough to prove that there is no *real* difficulty in the way of forwarding and receiving pre-payed *foreign* letters. The reasoning which applies to Calais will equally well apply to every other foreign port, to ship letters, and to our colonies. So far, therefore, as the impracticability of obtaining pre-payment on foreign letters has been conjured up as a "puzzler," it is a mere bugbear. There is no foundation for it, in fact; and the question of UNIFORMITY remains untouched by its assumption.

In addition to the "puzzler" we have just disposed of, the opponents of the measure enumerate some other objections against the possibility of a uniform rate, which their bold champion, the Quarterly Reviewer, thus particularizes:—

"All letters of above half-ounce weight, and of as many classes as half-ounces, and all the letters delivered in local districts from central offices, which Mr Hill calls a 'secondary distribution,' all these are, even on his own view, exceptions to the uniform rate; and the moment that *any* exception to the principle of absolute uniformity is admitted, it follows that the several post-offices cannot be reduced to that condition of mere *machines* for receipt and distribution, on which so much of the simplicity and economy of the whole plan depends."

We fully agree with the writer when he states that the moment "*any* exception to the principle of absolute uniformity" is admitted, there will be an end of the simplicity and economy of the whole plan. But need there be any "exception" in the instances he enumerates? Let us see.

To commence with "all letters of above half-ounce weight, and of as many classes as half-ounces." We are not aware if there is any limit fixed by the act of parliament for the weight of letters, but of course, in practice, there must be *some* limit. It will be sufficient for all purposes to assume a limit of two ounces as the *maximum* weight of a letter which the Post Office will undertake to carry. These two ounces will branch into as many items of charge as there are half ounces, namely four. Thus we have letters at the various rates of one penny, two-pence, three-pence, and four-pence each, according to weight. But is it meant to be stated that this variation of charge is a breach of uniformity? If so, let us take a common circumstance in actual life as a homely instance to the contrary.

Every body knows, at least every tradesman knows, that a man who keeps a shop and sells his goods at a profit for ready money by payment beforehand, is sure to do well if he has any business. If he never gives any credit, he has no accounts with customers; he has only to receive payment over the counter for what he sells, and afterwards to deliver what he has thus sold. His, therefore, is a strictly *uniform* business. Suppose a grocer's concern to be conducted upon this plan, would it be any violation of a "uniform" method if his parcels of teas varied in weight from an ounce to a pound? The principle of uniformity in his case, as in that of the Post Office, is confined to pre-payment. The difference of weight has nothing whatever to do with the question.

As to the "secondary distribution" of letters in local districts from central offices, we scarcely know what is meant, unless it is intended to refer to letters posted from one town to another, afterwards to be delivered at some place within the district of what is now (in London) the *two-penny* post, but which, under the new system, will have no existence. If so, we will grant a much wider range than this; we will admit, for the sake of argument, that a letter may be posted in London for York; that on its arrival in that city, the person to whom it is addressed shall have previously returned to London; that the letter follows him back again, but too late; for, before it is received, he is off to Bristol, from whence he may go by the *Great Western* to New York, and finally return again to London by the *British Queen*, the letter following him every step of the way. We say we will grant all this; what then? True it is, that a penny is very sorry payment for so much travelling, but is that any reason why an additional charge is to be made, and a consequent Post Office ledger account kept, against the individual? What is the amount of additional annual expense to which the Post Office would be put by the aggregate improbabilities of this nature? Infinitesimal!—not one farthing! As to its being an exception to Post Office uniformity, it is about as much of an "exception" as if the before-mentioned grocer's boy had to deliver a parcel of tea in Grosvenor place, which had been previously directed by mistake to Belgrave square.

Let us now address ourselves to the second part of our subject, which relates to the "cheapest mode of *securely* collecting the postage." Much of what we have to say under this head will apply to, and confirm, our previous observations.

We presume that *security* in the collection of revenue will be considered of paramount importance; and if security can be combined with economy in the mode of collection, a double measure of good will have been obtained. Does the plan of stamped envelopes offer either one or the other? A moment's reflection will suggest the proper answer. With respect to the "security," we will content ourselves with one objection (we have many more) that ought to be fatal against the adoption of *circulating* stamps. Let the government obtain the co-operation and assistance of the most skilful persons in the world towards the production of a stamp intended to defy forgery, and we will undertake to subsequently procure from Germany and France simulated copies to any extent, which shall effectually deceive both the public and the Post Office. This is no vain boast.* If a stamp should, after all, be adopted by the Lords of the Treasury, the country will be inundated with *foreign* forgeries. The temptation is the greatest ever yet offered. Let it be recollected

* A premium of 36,000 francs has been proposed by government for the discovery of means to prevent forgery of stamps, water-marks in paper, and engine-turned engravings. In order to show how easy it is to get over every precaution that has hitherto been taken to prevent counterfeits, imitations of every species of invention for that purpose have been exhibited to the officers of the different government departments, which were so perfect that it was impossible to distinguish them from the originals.—*Galignani's Messenger.*

that when French silks were taxed with prohibitory duties, the Lyons manufacturers undertook to deliver the goods they sold *into* the warehouses of the English purchasers *duty free*, at a charge of five per cent. on prime cost for the risk; and they successfully performed what they undertook to do.* A similar *trading* in contraband stamps will be the result of their adoption. Let not the government lend a willing ear to those who tell them forgery can be prevented. We tell them it can *not*, and we will bring the Bank of England to back our opinion. What did that great and *experienced* establishment say when it was urged to adopt a superior style of engraving its notes as a check to forgery? "'Tis of no use," said the Directors; "to prevent forgery is quite *impossible!*" As to all the schemes about manufacturing a superior sort of paper, it is mere verbiage and old woman's gabble. We have heard of a *patent* paper which is to defy imitation, except by violation of the patent; but will those who contemplate forgery stand nice about a patent? We do not believe in the existence of any machinery capable of producing paper not to be imitated by other machinery. The Bank of England Directors could not do it, although they tried hard for years; and after having expended large sums of money in fruitless experiments, they were compelled to adopt the invention of Mr Bramah for dating and numbering their notes *after* they were made, in order to enable their clerks to *check* them, and thus discover forgeries. The thing has never yet been done, nor ever will be. Even if it could be done, the people at large would require to be taught how to discriminate between the spurious and the genuine, which is practically impossible. In fact, no reasonable person can doubt that forging of any stamps or series of stamps which may be adopted, will take place to a frightful extent; and although the Quarterly Reviewer makes light of this matter of forgery, we look upon it as a fearfully wide-spread temptation to crime, and as utterly destructive of the simplicity and morality which should go hand-in-hand with the solid advantages to be expected from a judicious working of the new speculation.

And now a word as to the *economy* of collecting by means of stamps. But we will first stop to describe the plan we recommend the government to adopt. Common sense points out that the payment of a penny with the letter at the time it is put into the Post Office must be easier than first to send the penny, *and a farthing at least besides*, to some shop for a stamped piece of paper to be put round, or on, the letter, in order to frank it. The advantages of this simple plan are, first, that forgery is rendered impossible; secondly, that the revenue will be collected by the present postmasters without any additional charge; and lastly, that the time expended at the chief and other offices in examining stamps to see if they be genuine, will be wholly saved; and so far as the chief offices are concerned, this saving of time is of vital consequence. We are told that Mr Rowland Hill and others object to this plan upon the ground (there is no other) of

* Witness the celebrated case which came before Parliament, on which occasion this contraband trade was proved to be common and extensive.

an absolute necessity for the removal of the finance and account branches of the Post Office to some other public department, in order to relieve the former from a duty which would materially interfere with its power of carrying on the large increase of business to be expected, without a corresponding increase in the number of hands and expenses of the establishment. This opinion of Mr Hill, taken up and acted upon too hastily, was the sole cause of much anomalous evidence given by him before the Parliamentary Committee. After all, is it true that the Post Office would be unable to carry on the increased business, and collect its own revenue too, without augmentation of charge? Let us answer the question by seeing how the plan we propose would work; and one example is as good as a thousand.

The shop of a tradesman in Piccadilly is appointed a district Post Office. Here the letters of the neighbourhood are brought, and taken *inside*, a notification to that effect being printed on the Post Office board in the tradesman's window. With the letters the money is paid, according to weight; the receiver, in case of doubt, weighing before payment,* and afterwards affixing thereon a stamp (as now) bearing his name, address, day and hour of posting. The letters thus collected would be called for by a mail cart (as at present) every two hours; and the Post Office agent appointed to receive them would *check* them; that is to say, if there were 200 letters at a penny each, 48 at two-pence, 18 at three-pence, and 6 at four-pence, the total amount would be registered upon a printed paper (as is the case at present with *paid* letters) in manner following; which paper would be verified by the postman receiving both it and the letters.

GENERAL POST OFFICE.

		£.	s.	d.
200	letters, at one penny	0	16	8
48	id. at two-pence	0	8	0
18	id. at three-pence	0	4	6
6	id. at four-pence	0	2	0
272	letters. Total	£1	11	2

Here let the postmaster sign his name _____

Here his address _____

Here day and hour of posting _____

Countersigned by the postman who receives the letters _____

This paper would be taken to the chief office with the letters, the duty of the receiver there being to see that both corresponded. This done, the letters would be transferred to the sorters, and the account to the finance department, where the sums total, being registered in a ledger to the account of the district postmaster, would be after-

* This, in practice, would save the chief office all the trouble.

wards collected at stated intervals, *without cost* (as in the instance of *paid* letters at present), by the postmen who go round in the mail-carts or otherwise for the letters. If any one says this cannot be done, we reply that it *is* done; we refer to the Post Office itself in proof; and we will venture further to state, that the whole of ths pre-payed postage of the country, foreign letters and ship lettere included, may, upon this plan, be collected with regularity and without difficulty; without any addition to the number of working clerks already employed; without any increase of expenditure over that which is now incurred; and without any assistance from the Stamp Office, even if the letters to be received and forwarded were numerically *six* times greater than they are at present. Mr Hill hit the wrong nail on the head when he elected the Stamp Office to collect the revenue arising from postage. The two essentials required were general uniformity of rate and complete uniformity of pre-payment. These being obtained, it was a matter of small moment to relieve the Post Office from the duty of collecting its own revenue. The great saving of time which is to enable the Post Office to perform the task of a largely increased distribution without an increase in the number of hands, can only be the result of totally relieving the letter-carriers from the necessity of keeping accounts in the first instance with the chief office, and in the next with many of the parties to whom the letters are delivered. The plan of leaving letters at houses of business, without payment at the time of delivery, is universal. A letter-carrier has generally more accounts in his ledger than any of his customers can boast of; and, like them, he regularly makes out his *bill*. All this is as bad as it can be. The letter-carriers should have no accounts whatever either with the Post Office or the public. Their sole duty should be to deliver, with mechanical rapidity, the letters at the several doors, instead of waiting for payment, which involves an indefinite delay. No other saving of time is worth consideration, and if it were, we must not look to the expensive machinery of the Stamp Office for it. The notion of *economically* collecting the postage revenue by sending the CASH to the Stamp Office, to be exchanged for printed paper, is original, if not profound. In a word, economy and security are in one scale—the unnecessary cost of stamps and forgery (with its Pandora box of horrors) in the other. Which should kick the beam?

The last part of our subject is PUBLIC CONVENIENCE; and under this head we need do no more than ask each individual how the stamp would operate in his own case. The Quarterly Reviewer shall give the answer. He says, "Pre-payment by means of a stamp or stamped cover is universally admitted to be quite the reverse of convenient, foreign to the habits of the people, and likely, however slight the pre-payment may be, to excite some dissatisfaction in the poorer classes, and occasional difficulties to all." No doubt of it; although he afterwards somewhat inconsistently adds, "We will raise no objection about the practical details, however embarrassing they may appear; we shall lay no stress on the danger of forgery, nor on any general difficulty in obtaining the stamps." For our own parts, so far from laying "no stress on the danger of

forgery, nor any general difficulty in obtaining stamps," we consider them to be the Scylla and Charybdis of the unknown sea which our legislators are about to navigate for the first time; one false move of the rudder, and the gallant ship Post Office Reform will miss stays and be stranded. We therefore call upon the *pilot* to look after the helm in time.

The gross receipts of the Post Office for the year 1837, were - - - - -	£2,339,737
Total charges of management - - - -	698,632
Net produce to the Exchequer - - -	£1,641,105

To realize this amount by a penny postage the astonishing number of 561,536,880 letters, not exceeding half-ounce weight, will be required.

Our limits warn us to a close. Hosts of minor considerations force themselves upon our attention; and had we space, we could add up a column of apparently unimportant items, which, as a sum total, would be of imposing magnitude. We could dilate, for instance (in the case of stamps being adopted), upon a violation of the first great principle of the measure, which we take to be the payment of a penny, and no more, for a letter of the proper weight; whereas the purchase of a stamp involves payment for the paper on which it is impressed, and in all single cases the additional charge must amount to twenty-five per cent. upon the cost. To this we might add the monstrous labour of cancelling the stamps at the Post Office; the difficulty of checking hundreds of thousands of letters daily, in order to discover whether the stamp they bear be genuine or false; the great trouble which all foreign letters must occasion, with many other cases of a similar kind, the whole of which would absolutely be avoided by the adoption of the plan herein recommended; but we must pause. If the Lords of the Treasury will bring the act of parliament into operation by the aid of *penny-pieces* instead of *penny stamps*, they will adopt a system which will be looked upon with satisfaction by the whole country, and be comprehensible by every individual in it.

Raymond Percival.

MÉRIMÉE ON OIL PAINTING

THIS work (published by Whittaker and Co.) comes before us in the form of a translation, by Mr W. B. S. Taylor; and, with respect to the author, it is asked, "Who is he?" by the many, whom the subject of which he treats may most concern. Among us, the name has been hitherto known only to the few who have mingled in the crowds of students of all nations who frequent the public classes and the private schools of Paris, of whom the veriest *gamin* of St Germain-des-Prés that scours along the quay, blowing warmth into his frozen digits, benumbed by clutching his double-elephant sheet portfolio, would discourse with deference, as an authority especially excellent as regards the practice of the old masters. Our own classics in matters of art have been written by men of not only a national, but a European celebrity, whose names are associated with works of which their writings are the least part.

We have been for some time in expectation of a work of this nature from the pen of Mérimée; of whose devotion and researches we first heard some years ago at the residence, in the Faubourg St Honoré, of the courteous and learned Intendant of the Sculpture of the Musée Royal, shortly after the publication of his 'Outlines of Antique Sculpture;' and although his works do not hang on the walls of the Luxembourg, and his name be not so well known as those of Vernet, Delaroche, Scheffer, Court, and others, in practical art, we do not find him wedded to any style or manner; and it is at once evident that he has had better opportunities of observation than even many whose works are a theme of praise for all tongues.

Our author dates the French school from the time of Simon Vouet, who was born in Paris, A.D. 1582, and died there in 1641; and the commission formed to report upon his work seem to have expressed some dissatisfaction that an earlier date had not been assigned to it; but in no manner of justice could this be claimed, as the artists who preceded Vouet were neither distinguished nor numerous. Among his cotemporaries of the French school, so called, were Stella, Santerre, Blanchard, and others less known; but, as the names of Le Brun, Lesueuer, Mignard, Valentin, and Dufresnoy attest, he brought forward many pupils whose works are of a high order of merit. Even at the present day, the French do not admit the existence of such a thing as an English school of art; and this will be found to be the rabidly desperate opinion of a certain set of men hedged in by a code of trite and offensive nationalities, the extent of whose travels, like those of Dr Primrose, have been "from the blue bed to the brown." Henry VIII had a love, strong and natural, for works of art, and this would have been the era whence to have dated, if not the *school*, at least the culture of painting in England; and had the bluff King been followed by an unbroken succession of native princes, affording the slightest countenance to professors of the mystery of painting, there is a strong probability that an English school of art would have established a name at a comparatively early period; for pictures were in demand, but the commissions were monopolized by foreign artists, introduced into England for their execution by the foreign princes who filled the British throne. Your veritable artist is an artist

malgré lui, very often in spite of his friends, but he cannot be practically so, despite patronage. It occurred to an architect of subsequent celebrity, that his estimate and plans for the erection of a church in a certain diocese were approved, and a resolution was passed for their adoption; but the charitable diocesan annulled the resolution, on the discovery that the architect had built almost everything of stone and mortar constitution but a church. It is the same with the painter, and wherever commissions have been given, it has been seen that there has been no dearth of talent to execute them. But the zoology of this creature is yet unread; the mechanical, every-day world knows nothing of the throes of his heart, yearning after fame, and while bread is even wanting, the hope of it

> "—— Fa piani i monti, e i fiumi asciutti;
> L'ardor toglie alla state, al verno il ghiaccio."

Francis I, the cotemporary and chivalrous rival of our "fat friend" Henry, did much for the establishment of the arts in France; but if we consider other examples of rapid improvement, their progress was by no means equivalent to the encouragement afforded. During the long reign of Louis XIV the taste became more generally diffused, and that most patient of all sitters on record sat no less than ten times to Peter Mignard alone; upon the last of which occasions the King observed, "You must find me now grown old;" to which the wary painter replied, "Sire, I find only a few more campaigns traced upon the countenance of your Majesty." By the way, there may be reason to doubt this artist's being of genuine French extraction; he was certainly born at Troyes, but his family name was *Moor*, which was changed to that of Mignard, in consequence of a little pleasantry of Henry IV, in whose service his father and several of his brothers held rank as officers. All being very handsome, the King one day remarked them, and asked their name, which being told to him, his observation was, "*Maures! ce sont des Mignards!*"* and the name was ever after given to the family.

Our French neighbours are somewhat at fault in the classification of the artists of their school; and this is ("Mark it, Cesario!") a circumstance which cannot be too carefully looked to by themselves. Among many doubtful instances may be noted that of Demarne, who was born at Brussels, and studied under Nicasius, a Flemish painter; as also that of Van Spaendonck, who was born at Tilbourg, in Holland, and studied under Herreins. If these men are to be accounted of the French school, surely Poussin and many others, who were working nearly all their lives in Italy, must be of the Italian school.

In the "Report of the Institute of France," which appears as a preface to M. Mérimée's work, the following passage occurs:—"M. Mérimée believes that he has traced the deterioration of our pictures to have followed as an inevitable consequence of the decay of our school." And adds, that "since this school has become regenerated, the painters have proved themselves more careful, the colourmen more conscientious," &c. It had certainly been more graceful of the commission of the Institute to have said nothing about this conclusion of our author, but if this be their dry joke, with all our hearts do we join them in it. It is here,

* The word *mignard* means a favourite—a handsome man.

however, admitted that the French school *has been* in a state of "decay;" and if to save the city we sought for a dozen good men, who flourished during the first half of the last century, they would not be forthcoming. This period produced Claude Joseph Vernet, Jouveret, Lafosse, Largilliere, Oudry, Puget, Restout, Pesne, and Subleyras; and the latter half of the century brought forward somewhat more in number, among whom were David, Greuze, and one or two other celebrities, and is a singular instance of the very bad taste of the time. The Louvre contains but one picture of Watteau, and that by no means a favourable specimen. It is not our object here to discuss the presumed causes of the temporary decay of the French school of painting; but this fact, which the native artists are so slow to admit, has been always well known to the rest of Europe, to whom it has ever been matter of surprise, considering the progress that painting made in France from the time of Simon Vouet to the commencement of the eighteenth century; and also the favourable circumstances of the continued patronage of native painters, and the absence of lengthened political convulsions.

The splendour and imposing magnificence of the Catholic church have done everything for art in its early stages; but as the days of its glory have passed away, the artist has been obliged to cater for tastes widely different from that which filled so early the churches of Rome, Venice, Bologna, and others of the Italian cities; and although the real cause of such patronage was not publicly admitted, yet the real effect spoke out, and the picture drawn by Schiller, in his tragedy of 'Maria Stuart,' of the apostate Mortimer, is one for which thousands have sat, and his confession may even be theirs also. He ascribes his change of religion to the moving ceremony of Catholic worship, and to the effect of the pictorial embellishment of St Peter's, in speaking of which his enthusiasm leads him on to say—

> "Wie wurde mir, als ich ins Innre nun
> Der Kirche trat, und die Musik der Himmel
> Herunterstieg, und der Gestalten Fülle
> Verschwenderisch aus Wand und Decke quoll,
> Das Herrlichste und Höchste, gegenwärtig,
> Vor den entzückten Sinnen sich bewegte,
> Als ich sie selbst nun sah, die Göttlichen
> Den Gruss des Engels, die Geburt des Herrn,
> Die heilige mutter, die harabgestiegne
> Dreifaltigkeit, die leuchtende Verklärung."

It is observed in the report of the commission on the work before us, that France possessed some "very clever" artists before the time of Vouet. This artist was a pupil of his father, but we do not find in the gallery of the Musée Royal any production of the father, nor indeed do we believe that the collection contains any specimen that can be assigned to any known native hand anterior to his time. Previous to the school of Vouet the artists most in esteem had of course been foreigners, and patronage was lavished upon them with the view of introducing a refined taste and some relish for the arts, and certainly the French school can therefore by no means be dated antecedent to this period. None of the early pictures have been destroyed by the excesses of an infuriate populace, such as rose throughout the Netherlands for the sole purpose of destroying pictures and statues, and of obliterating every vestige of Catholic worship. These atrocities, the wonder and horror of Europe, were commenced

A.D. 1566, and were the means of inducing Philip II to visit his provinces in the Netherlands, where he left behind him the Duke of Alva, one of the bitterest scourges of the human race. "In Antwerp," says the historian, "a temple of seventy altars was destroyed in a few hours, which, except St Peter's at Rome, was the most splendid in Christendom." Again: "Within the space of four or five days, in Brabant and Flanders alone, four hundred churches were despoiled." And this demoniacal destruction involved many of the best works of John Van Eyk, Lucas of Leyden, Hemmessen, George Pentz, and other painters of the early Flemish and Dutch schools, of eminence sufficient to render their works desirable in the most celebrated galleries of Europe. Here also was painting promoted by the method of embellishing the churches, and after their desecration by a blind and maddened populace, the melancholy occasion gave a fresh impetus to art by the employment of all the native talent in their restoration; and some time after this arose that quaint distinction of these schools—pictures of carrots and turnips in grouped companionship, copper casseroles, wooden spoons, and, as the catalogues have it, "*divers autres objets de nature morte.*"

In the 'Report of the Institute of France' upon M. Mérimée's book, the bad colouring of the French school is slightly alluded to; and we do confess that the infatuation of some of the members of the living school in this respect is utterly incomprehensible. The drawing of this school is of a superior character, and we have seen works of some of the most accomplished draughtsmen sent back in their colouring to the days of Cimabue. M. Ingres affects the colouring of Giotto, and if the *penchant* be generally as deeply rooted as it is in him, the Institute vainly hopes that the time is arrived for a marked improvement in this; for his admirers are legion, and we acknowledge ourselves among the number, colouring out of the question; and even so enthusiastic were the pupils of this master that many of them followed him on foot to Rome, at which place he had been appointed to direct the French Academy.

M. Mérimée commences by "an inquiry into, and observations upon, the various methods used in oil painting, from the days of Hubert and John Van Eyk to the present time;" in the course of which he discusses the claims of the brothers Van Eyk to distinction, as having been the first to employ oil colours in painting pictures. In notes appended to the introductory pages of this inquiry there is mention of a Latin M.S., entitled 'De Arte Pingendi,' published in 1781 in London, by Dr Raspe, by whom it had been translated from the original dissertation of Theophilus, a monk who lived about the end of the tenth or the beginning of the eleventh century. We have never met with this treatise; if, however, it be *genuine*, it is valuable as an authority that oil was used as a vehicle for colour at a much earlier date than is supposed, though only for purposes of ordinary house-painting. Dr Raspe contends in his translation, that the MS. proves incontestably that pictures were painted in oil from a very remote period; but if we accept our author's reading of this translation, we must believe that he (Theophilus) "points out the manner in which walls, wood work, and even statues, ought to be painted; *but he does not anywhere give advice to apply oil painting to pictures.*" We may infer from M. Mérimée's account of the treatment of this subject by Theophilus, that this practice was common during his time, which excites our surprise that the application of colours ground

in oil to the purposes of painting pictures should have been so long delayed as until the time of the Van Eyks; for admitting that they painted in oil even as early as 1427, this leaves us a *hiatus* of upwards of four hundred years, during which we have no further record of the practice; nor does it form the subject of any treatise until Cennino Cennini published his, A.D. 1437. But although there be extant no acknowledged essay on the subject, science must have been extensively cultivated in the interval, with a view to perfection in the production of colours; as, says the note on this subject, "painting on glass was practised with great success; enamels were fused to be employed for mosaics; and, by the aid of commerce, the artists could, and did, obtain the ultramarine Indian lake and Chinese vermilion; and they likewise understood how to prepare them." Cennini describes the method of preparing ultramarine from *lapis lazuli,* and also speaks of the lakes being extracted from resin-lacs, or "prepared from the shearings of wool." Varnishes also are spoken of as having been in use for some centuries (previously, we presume, to the composition of Cennini's treatise), "and the discovery of distillation had enabled the chemists to produce the volatile, or essential oils with which the varnishes, when too viscous, might be diluted and rendered as liquid as required."

Here, it seems, is nothing left to desire, even for the pallette of the best colourists of the English school; for although the rarer prepared colours only are spoken of, we may consider the commoner colours as inclusive; and since painting on glass was practised so early, and the art of preparing the finest colours, and the result of their admixture with an oleaginous vehicle, so commonly known, it is difficult to believe that attempts at what is commonly called oil-painting, should not have occurred to those early itinerant decorative artists who were employed by all lovers of barbaric splendour to embellish their palaces.

If we accept M. Mérimée's reading of the MS. (presuming the same to be genuine), and we are willing to give him every credit for a just construction, we must agree with him that Dr Raspe's assumption, that pictures were painted in oil as early as the tenth or eleventh century, is not borne out by the MS.; but the very passage quoted by M. Mérimée, in which Theophilus expresses an opinion that the process of painting pictures in oil would be too tedious, declares plainly enough that oil painting had been contemplated, if not actually attempted. This quotation stands thus—"*Quod in imaginibus diuturnum et tædiosum nimium est.*" Theophilus, also, in his instructions to house-painters, directs them "by no means to lay on a second couch of colour until the first is completely dry;" and herein is comprehended the practice of modern house-painting. Thus, although to Van Eyk may not be attributed the entire merit of the discovery of painting in oil, "he cannot," says our author, "be denied that of having carried the preparation and use of colours to a degree of perfection which has never been surpassed," &c. &c., and much of this credit we are disposed to allow him.

M. Mérimée, in speculating upon simple and compounded vehicles, says:—

"The most certain way of recovering the primitive process is doubtless that of examining with attention the earliest pictures in oil, and by consulting persons who are habitually engaged in restoring them. We learn from these researches, that the colours of those pictures which belong to the first epoch of oil-painting are mostly of a

harder body than those of a later date; that they resist dissolvents much better; and that, if rubbed with a file, they show underneath a shining appearance, resembling that of a picture painted in varnish. It is easy to ascertain the truth of these observations; and when there is no longer any doubt on this point, we may fairly conclude that the colours of those pictures have not been simply used with pure oil, as those of our days, but with a mixture of varnish, of which some would be found to be of that description which we call 'hard varnish.'"

A mixture of oil and varnish, commonly called megilp, has long been a favourite vehicle of the English school; and in pictures painted with this the colour, when in body, sets in a manner so peculiar as to leave no doubt of the presence of varnish. This quality may not be apparent in works painted with a combination of oil and varnish, which, we believe, unless the oil have been well boiled with litharge, will not form our ordinary megilp; but pictures painted with this mixture must present the appearance of having been painted with a vehicle thinner and more fluid than even the simple boiled oil. There can be no doubt of the greater hardness and consistency of pictures painted during the first epoch of oil painting, but this quality they must derive from age. Of the glazing of the Italian masters our author says:—

"Titian, Corregio, and F. Bartolemeo, are the painters who have made the greatest use of glazing. I have not yet seen a picture of Titian which is not glazed from one end to the other, even in the brightest parts; and if occasionally we see some parts without it, yet upon a close inspection we shall find that it is because the glaze has been carried off in the cleaning."

The glazing of each of these masters is different in its character. The glazing matter employed by Titian, especially that used to finish the flesh of his female figures, must have been a secret known only to himself, for we look in vain for the same liquid and translucent glaze among those of his pupils who most affected his method of painting. Of these, the works of Paris Bordone, Tintoretto, and Bonifacio are perhaps the best known. He is said to have driven Tintoretto from his atelier from motives of jealousy: there may be, therefore, grounds to believe that he would not communicate to his pupils this crowning arcanum upon which he sometimes relied to divert the eye from a certain hardness of outline which he has been pleased to leave in some of his works. The work in which this glaze can be most readily traced is the picture called 'The Flora,' which hangs even with the spectator's eye in the Venetian school of the Public Gallery at Florence. The work is as clear and as fresh as any modern work but a few years from the easel, and over the clear cool tints of the bosom the glazing matter has flowed freely, and one or two pellucid amber-coloured gouts have settled over the solid colouring. Bonifacio always finished his flesh with a glaze in imitation of this, and his pictures have been sometimes mistaken for those of his master; but his coarse, rusty glaze is immediately perceptible in his female figures, distinguishing him at once from him, who, as his countrymen say of him, "painted in gold upon damask." Of Rubens's manner of working M. Mérimée says:—

"Rubens has often painted a picture off at once upon very smooth panels. He used very little colour in the shadows, or even in the half-tints; it is in the light parts only that we find touches of solid colour.

"If, with the colours now in use, we should attempt to paint a picture up at once upon a similar ground, we should soon find ourselves stopped by an insurmountable difficulty. The colour would glide over a surface too fine to retain it; a second attempt

would obliterate the first; and we should very soon discover the necessity of beginning with a slight dead colour, and of substituting, for the smooth surface, one somewhat glanular, and retentive of the colour."

The author speaks thus of Van Dyke:—

"Van Dyke, who had at first adhered to the manner of Rubens, and had even gone beyond him in the extravagant use of cinabar, changed his process and his colouring when in Italy: he painted with a full body of colour like Titian; but was more cautious in the use of glazing.

"After having, like his master, made an inordinate use of vermilion, he abandoned it for a system of colouring less brilliant, but more true to nature,—arising, probably, from his painting so many portraits, which brought nature constantly before him. As he had some experimental knowledge of chemistry, he found that the elements of cinabar were not favourable to its stability; consequently he used it but seldom. It is probable, also, that he recommended to his pupils to be sparing of its application, as they would find in the Venetian red the brightest tints of the most brilliant carnations. P. Tyssens, one of the most skilful artists of this school, never made use of cinabar; and a pupil of the latter exceeded his master's instructions so much that his pictures present little else except a grayish tone."

Of Rembrandt's method he says:—

"Apparently nothing can be more remote from the process used by Van Eyck than that of Rembrandt, yet he followed that method in his earlier works, but the vivacity and strength of his imagination made him abandon it, as he no longer attached any importance to the executive part. Impatient to realize the fine effects that presented themselves to his imagination, this made him rather careless in the application of his colours: whatever he found on his palette he turned into use. Then it was that he often used muddy and opaque tints for those that were brilliant and transparent: but he had too fine and just a sentiment of colouring to admit of his looking upon this species of art but for a brief period, and his first care in making up his palette, no doubt, was to restore the lost transparency by glazing."

After having reviewed the various methods employed by masters of the original schools, we come to some account of the French school, for the defective colouring of which M. Mérimée accounts, by attributing it to the established practice of "painting from drawings," but there is more than this mere practice to overcome before the character of the French school will stand high as a school of colour.

The third chapter of this work treats of varnishes, and every known substance entering into their composition, used, or supposed to have been used, in the most estimable works of art. This part of the work we have heard has been censured as unnecessary, but it must be borne in mind that the great difficulty in copying the old masters frequently arises from the circumstance of their having been their own colourmen; and again, that the work has been written for circulation in France, in the distant provinces of which artists themselves prepare their colours at a very cheap rate. We may remark of the colours commonly sold in Paris, that they are by no means well ground, but they are very cheap, as the earths and common kinds may be had at three sous per bladder. This book contains a great deal that we already are acquainted with, but the author displays much knowledge of the art, acquired by years of patient investigation, and this he has presented to the world in a form which no artist should be without.

H. Murray.

PAINTING A SKY.

It is well known that Raffaelle was no Drawcansir at landscape-painting; a circumstance most probably arising from the entire concentration of his mighty powers upon what auctioneers, and people who prattle about paint and painters, are pleased to call "another style;" that other "style" by which he became immortalised. *S'entr'aider* (to help one another) in the time of Raffaelle was not much the fashion in finishing; if it had been so, he perhaps would not have availed himself of it to any great extent; but we cannot help wishing that he had employed some acknowledged worthy of his time to put in his glimpses of landscape, as he employed Julio Romano and Giovanni d'Undino to work out his ornaments and arabesques in portraits, after he had finished the heads. Paul Brill painted landscapes in a few pictures of Annibal Carracci, who, in return, painted for him, and sometimes, in the works of Domenichino, we may find flowers put in by Mario de Fiori, or Daniel Seghers, the Jesuit of Antwerp; but the practice is not found to be so general as among the Dutch artists, those hob-a-nob fire-side gossips whose works even to this day are redolent of dock tobacco and Danzic black beer. In the pictures of Vander Meulen sometimes Huysmans painted the landscape; and in those of Moucheron, we find the work of Adrian Van der Velde; and there are pictures of Poelemburg upon which Breemburg has painted; and Tempeste has done the like in works of Rosa di Tivoli. In the landscapes of the amiable Ruysdael, Philip Wouvermans frequently put figures, and Berghem animals; and in those of Wynants, Adrian Van der Velde put figures and animals; as also were the works of Van der Heyden often peopled by him. Even Rubens has added the charm of his pencil to the works of others; as, in the Louvre, if we remember aright, may be seen a picture by Velvet Breughel, the figures of which are by him. Many more instances of this kind might be cited, but these will suffice for the present purpose.

S'entr'aider is not uncommon in the English school where points of departure from an artist's ordinary habits of work create a feeling of diffidence, but it rarely occurs that the two names attach to the work. Sometimes the commonest objects create intense difficulty when an artist is fastidious and jealous of all foreign assistance; for instance, to PAINT A SKY is the halting point of one of our artists, who is in the enjoyment of a certain degree of celebrity. This, his foible, became known to us through a mutual acquaintance, who, calling one day at his house, had the door opened to him by a female domestic, whose eyes were red with weeping:—

"Is Mr —— at home?"

"Yes, Sir; but—but—he's *painting a sky*, Sir;" and up went the apron to her eyes as she began to whine anew.

It struck the visitor that something must be "out of joint." As he was hurrying to the well-known *studio* the girl hastily exclaimed—

"Oh pray—please Sir, don't go up, it's not safe—he's *painting a sky*, and he doesn't see nobody on sky-days."

This expostulation had its effect. "Well, well," said the other, "if Mr —— has given orders not to be interrupted, make my compliments, and say I will call in the evening."

The evening came, and the daylight went, and the would-be visitor addressed himself again to the painter's knocker, under the impression that there was then certainly not light enough for "painting a sky."

The door was opened as before, and the applicant was about, unhesitatingly, to proceed to his friend's studio, when he was again encountered by the servant's deprecating accents.

"What! not to be seen yet?"

"Oh no, Sir; master's skying away like a madman; he'll be the death of us all."

It was ultimately agreed that the visitor should wait a little in a lower room, as the artist's usual hour of relaxation from professional employment was already past. The room into which he was shown was immediately below the studio, and he took up a book; but from the noise overhead, he found it impossible to read. The painter was pacing up and down in precipitate and violent action, and from the noise and sound of splinters, heavy objects of furniture were undoubtedly smashed; lighter ones seemed to be kicked about with the fury and increased power of a maniac; the door, too, was slammed with fearful violence, and from time to time the shivered glass of the windows fell upon the pavement.

The visitor became alarmed; he was rushing up stairs, when he was met by a young child who was wailing and lamenting aloud as if he had been severely beaten.

"What can be the reason of all this?" demanded our friend.

"Oh! Pa's *painting a sky*—Pa's *painting a sky*," was all, in his excessive grief, the boy could utter. While yet condoling with the child, another, younger, rushed down stairs with a rapidity to endanger its neck—the cry, as before, "Pa's painting a sky."

The second child was followed by Mrs ——, who apologized for the prevailing confusion. "But," added she, "this is so often the case, when Mr —— has to paint a sky, that it is my most fervent prayer he may never paint another."

The tears stood in the good lady's eyes, and scarcely had she finished speaking when an unlucky dog was hurled from above, filling the house with his shrill and piteous howlings; and lastly, the cat descended with a like precipitation. Our friend, despairing of meeting the artist in a rational state, now took his hat, his departure, and a resolution to visit him some other day, when his employment was not "painting a sky." H. M.

FRENCH ACADEMY OF SCIENCES.

THE DAGUERREOTYPE: LETTER OF M. DONNE TO M. ARAGO.

If you will publish the following results of certain observations which I have made upon the working of the Daguerréotype, I am persuaded they will tend to establish the *theory* of this ingenious discovery.

On commencing the operation, which consists in exposing the silver plate to the vapour of iodine, the surface of the metal, as is already known, becomes covered with a couch of a yellow colour. Is the iodine deposited in a very thin couch upon the metal in its simple state, or does it combine with the silver? does it assume the state of iodide?

When well lighted by a lamp, the rays concentrated by means of a glass, and seen at the magnitude of from 150 to 200 times the diameter, this couch does not present any similarity of composition to anything wherein iodine crystals may have entered; but it is uniform and consistent. Besides, this couch is firmly adhesive, and resists evaporation when exposed to a high temperature. These facts induce the belief that the iodine is really combined with the silver, and that the yellow couch is iodide.

It adheres tenaciously to the silver when the plate is drawn from the vapour of the iodine, and before it be exposed to the light; thus it will resist the action of rubbing by the finger; but a very important modification is brought about by the influence of light, the effect of which is to destroy the tenacity of this coating so entirely that the slightest friction is sufficient to disengage it.

This fact is sufficiently obvious in the following experiment:—Let a plate be exposed to the vapour of iodine until it has assumed the yellow colour; after which let it be presented to the action of the light, with a portion of the surface shaded by some protecting body. The iodide will then be found to yield to the slightest friction on that part which has been exposed to the light, while that portion which has been shaded will successfully resist contact. The effect is less obvious upon a plate in the camera obscura, but it is of a like nature.

Now this is the result when the metallic plate, previously submitted to the action of the light, is exposed to the mercurial vapour. Upon the light parts the couch of iodide, not adhering to the plate, does not preserve the silver from the action of them ercury; we also see clearly, after the operation, this metal condensed into very small globules, sufficiently perceptible by means of the microscope, upon all the points struck by the light, as was observed by M. Dumas; while in the shaded portion the couch of iodide has not permitted the mercurial vapour to attach to it. Microscopic observation does not exhibit any globules of mercury in the perfectly dark portions, and only a few in the half-tints.

Another experiment calculated to establish this fact, is as follows:—If a metallic plate, after having been submitted to the vapour of iodine, be immediately exposed to mercury, and then subjected to microscopic examination, no mercurial globules are perceptible on its surface, because the iodide not having been acted upon by light, remains adherent at all points, and has resisted the effect of the mercury. But if, in this state, it be submitted to the light in the *camera obscura*, and be again offered

to mercurial action, an image is obtained, very imperfect it is true, but distinct; and, moreover, mercurial globules are discernible in the light parts.

This explains the extreme inconvenience, pointed out by M. Daguerre, of leaving the silver plate too long exposed to the vapour of iodine; until, for instance, a violet tint be produced; indeed in such case two couches of iodide are formed, the one of a violet colour and superficial, the other more solid and yellow. Thus, when the light has acted on the first, it does not affect the second, and the latter does not admit of the action of the mercury. This fact may be confirmed by removing with the finger the first couch of iodide acted on by the light, below which presents itself the couch of yellow, intact. According to these experiments, the image produced by the process of the Daguerréotype would be thus formed: the light parts by the mercury in globules, and probably amalgamated with the silver; and the shadows by the simple metallic surface, without any foreign deposit, or production of any combination. It is, in fact, that which is left when, after the operation, all remaining traces of the iodide have been removed by a wash of the solution of hyposulphate of soda. The black or shaded parts are bare, and reflect the light like polished bodies and glasses, while the light parts are covered with a couch of greyish white, which soils the fingers, is easily removed, and in which the microscope exhibits a quantity of mercurial globules; hence the necessity of a perfect burnish of silver as M. Daguerre recommends.

ON THE INFLUENCE OF CHEMICAL ACTION IN THE EVOLUTION OF ELECTRICITY.

Our celebrated countryman Doctor Wollaston, as far back as the year 1800, proved by experiments (the legitimacy of which cannot be denied) that voltaic electricity, and that produced by the common electrical machine, were identical. He showed beyond dispute that voltaic electricity was produced by the oxidation of one of the metals, and argued that it is the oxidation of the amalgams which produces electricity in the common electrical machines. He showed the inutility of amalgams composed of silver and platina, and the efficacy of those of zinc and tin, the latter being superior from the greater oxidation of which they are capable. He demonstrated the truth of this by the failure of his attempts to produce electricity when the machine was immersed in carbonic acid. Gay Lussac denied this in part, and asserted that electricity is produced whilst the machine is immersed in carbonic acid, provided that the latter be well dessicated.

M. Peclet, a celebrated French chemist, remarks—

"Now it is very certain that electricity can be easily obtained by the simple friction of bodies without any action upon each other, and without the possibility of chemical action from the surrounding atmosphere. Dr Wollaston was, in all probability, led into this error from the imperfect dessication of the carbonic acid in which he performed his experiments."

In order to discover whether the results of friction when the operation is conducted in an atmosphere of common air, and when in one of carbonic acid, this gentleman performed a series of experiments, the relation of which will necessarily be interesting to the chemical world. He says there are two ways in which the gas in which the operation is conducted may act. It may act as a conductor of greater or less capability, or it may act directly in producing the effects. The first question to be determined was, therefore, the different degrees of conductibility of different gases.

"Two of Coulomb's balances, identical in form and magnitude, were provided. A small glass tube containing a copper rod, with a metallic bulb at each extremity, was cemented into the orifice of the glass at the end of the lever of both instruments. The vessel was provided with two tubes, which formed the communication from without; the orifice of one was near the bottom, and the other near the top of the vessel. By means of these tubes the gases in the vessel could be changed for others at will. The induction-tube communicated with a larger one on the exterior, and which was filled with chlorure of calcium. One apparatus was attached to a blow-pipe, the other to an apparatus for making carbonic acid. The force of torsion was proved to be the same in both apparatuses; for when the exterior bulbs received the same electric charge, the moveable balls recoiled the same angular distance, and recovered their position at rest, in the same time. To give the same charge to the fixed bulbs of the balances, two similar metallic bulbs, covered with gum-lac, were fixed at the extremities of the two glass rods. One of the two was charged directly, and the two being in contact, both received a similar charge of electricity, and immediately after both were put in communication with the exterior bulbs of the two balances."

"A current of dessicated air was now driven into one of the balances, and carbonic acid equally dried into the other. The following is the result of the experiments, the figures between parentheses representing the limits of oscillation:—

Times from the beginning of the repulsion.	Deviation in the Air balance.	Deviation in the Gas balance.
45″	(22° @ 35°)	24° @ 26°
105″	(20° @ 25°)	22° @ 26°
135″	18°	19°
150″	0°	3°

The results in each case are so nearly alike that the difference must be attributed to some imperceptible difference in the instruments. When the air was *not* dessicated the results were very different, there being sometimes nearly five minutes before the ball came to rest in the case of the acid, and only three in case of the air.

"To produce friction in different gases, a pan was placed on a wooden stool. At the centre of the stand was placed a *box* (?) traversed by an iron spindle, carrying a concentric glass cylinder, which was made to revolve with rapidity by the action of toothed wheels and a crank worked by the hand. Under the pan was a fixed cushion covered with gold leaf, and on the opposite side a metallic comb, communicating with a copper wire issuing from the pan, and prolonged to an electrometer placed in a pan of air, highly dessicated by chloride of calcium. Across the stand passed two glass tubes, one to let in the dried gas, and the other to let it out. When the carbonic acid had been admitted into the vessel in such a quantity as to make the proportion of air be only one-eighteenth of the whole, and when the cylinder was revolved with the proportional velocities 1, 2, 4, then the indicators of the electrometer presented successively for the air (25° @ 28°), (30° @ 35°), (40° @ 45°), whilst for the carbonic acid it showed (30° @ 35°), 45°, 95°; it must be remembered that in these experiments the air previously passed into the vessel was not dessicated. When the contrary was the case, the results were the same for the air as for the carbonic acid."

These experiments of M. Péclet cannot at all be considered as deci-

sive upon the question at issue. As carbonic acid contains a large proportion of oxygen, it is evident that oxidation might take place. Moreover the inference intended to be made by M. Péclet, that *all* gases have equal electric conductibility, can by no means be borne out. We have lately seen many attempts made to pass electricity through hydrogen, but always without success. The exact measure of conductibility of different gases is an interesting subject, but one that ought to be confided to a more careful experimenter than M. Péclet.

MISCELLANEOUS.

An Ancient Tumulus.—We find in the 'Courier Français, an account of the discovery of a *tumulus* of the time of the ancient Gauls, in a field in the commune of Chaulges, canton of La Charité. In that district the soil is covered with pebbles, which are gathered into heaps in the fields, and afterwards used for the highways. Among these heaps there was one which had been long observed as being higher and of a more regular form than the rest. It stood between two other heaps, from which it could hardly be distinguished; nevertheless there was some confused idea of mystery attached to it by the peasantry, among whom it was an object of superstitious dread, handed down, apparently, by tradition; and nightly passers-by were frightened by strange lights which they imagined they saw and dismal sounds they heard, proceeding from it. At last a contractor for the roads attacked this supposed heap of stones in the same way as the others; and, after some cartloads had been carted away, the workmen were surprised to discover bones and remains of human bodies among the rubbish. They could ascertain the position of each body by the bones of the limbs, the trunk, and the head. There were entire skulls, jaws perfectly whole and garnished with beautiful sets of teeth, so fresh in their enamel as to evince the youth of those to whom they had belonged. Mingled with these remains, there were rings of iron and copper, of various sizes, but all of the same form, and evidently intended to encircle the arms, the legs, and even the waist. Most of them were of plain and simple workmanship, except two or three, and a kind of diadem, which probably belonged to the leader of a band, who, with his followers buried with him, had been slain in battle. All these insignia evidently belong to the barbarous times of the Gauls.

After these first discoveries, M. de Sainte Marie had the ground dug, expecting to find a cavity, according to the invariable manner of the Danish or Swedish *tumuli*. But this one was differently constructed. Large flat stones had been laid on the ground, and on these the bodies heaped in a square form, the feet of some resting on the heads of others, after which they had been covered up with stones and earth. From the size of the bones, many of these warriors must have exceeded six feet in

stature. Some of the bones, and a very small ring, probably belonged to a woman; "who," says the French journalist, "may be supposed the priestess whose auguries guided the troops, or one of those women who, following their husbands, sons, or lovers, to war, stood behind them in battle to stimulate their courage, arrest their flight, and oblige them to return to the charge, that they might conquer or perish."

Scientific Mission to Abyssinia.—The French journals announce the departure of a scientific expedition to Abyssinia under the auspices of the government. The travellers are Messrs Galinier and Ferret, military officers distinguished in science, and M. Jules Rouger, a young naturalist of talent. The principal object of the journey is to make a map of the country, particularly the environs of Gondar, the lake Tana, and its numerous tributaries. The travellers will also study the geological formation of the country, and make extensive collections of plants, animals, and other objects of natural history. They have been furnished by the government with maps, charts, books, and all sorts of instruments necessary for the prosecution of their investigations. "At the moment," says the 'Constitutionnel, "when the government is actively engaged in establishing relations between France and the shores of the Red Sea, it is easy to understand the importance of an expedition set on foot under such favourable auspices; and we are happy that the mission has been entrusted to staff-officers whose knowledge and zeal are a guarantee for results which will be permanently beneficial."

FOREIGN MISCELLANY.

Paris.—Horace Vernet is about to undertake a journey into Egypt. He has completed the series of designs for the illustration of the 'History of Napoleon,' and he proposes visiting the scenes of some of the great events which that history records; for example, the fields of battle at the Pyramids, Mount Tabor, Aboukir, &c. He has not quite determined whether or not to extend his journey as far as Syria. He intends taking with him a Daguerreotype apparatus.

Vienna.—Science has recently sustained an irreparable loss by the death of Frederick Mohs, Imperial Counsellor of Mines. He died at Agordo, in Venetian Lombardy, whilst engaged on a scientific journey.

Pisa.—The great Scientific Congress, which assembled in this city at the beginning of October, was attended by upwards of two hundred men of learning and science from different parts of Europe. The learned foreigners who visited Pisa for the purpose of being present at the sittings of the Scientific Congress, were received, on their arrival in Pisa, by two professors of the University, who inscribed their names in the scientific sections to which they wished to belong. In the celebration of the first sitting of the congress on the 1st of October, high mass was performed in the Pontifical Church of Pisa. On the 2d of October the inauguration of the statue of Galileo took place under the portico of the University. It is the production of the sculptor Emillo Demi, of Leghorn, and is of fine Carrara marble. Among the German men of science, members of the society, are, Herr Oken

from Munich, and Herr Link from Berlin. The celebrated Professor Oreoli has arrived from Corfu.

Naples.—The railway to Portici was opened on the 28th of September. The journey is performed in seven minutes.

Greece.—Recent letters from Athens mention that his Royal Highness the Grand Duke of Holstein Oldenburgh has subscribed a large sum of money towards the building of the University of Athens.

St Petersburgh.—A trial was lately made on the Neva of a portable boat, invented by M. Kirstein, engineer to the Russian Imperial Navy. The boat is made of India rubber, is furnished with canvass sails, and may be bent and folded at pleasure. The whole may be compressed into the reduced compass of a small portmanteau. In less than ten minutes it may be unpacked and converted into the form requisite for navigation, four little brass cocks being opened to admit air into the interior. The portable boat has this advantage, that its capabilities of sailing are equal, either at the highest or lowest tides. During the experiment above mentioned the boat contained three persons; but, in case of emergency, four may find room in it. All who beheld it floating on the Neva were filled with admiration at the elegance of its form and the perfect manner in which it balanced itself on the water.

Copenhagen.—Thorwaldzen is about to leave this capital on a journey to Rome. It is his intention to proceed by the steam-boat which runs from St Petersburgh to Havre, and which touches here on its way. Thorwaldzen originally intended to have accompanied Professor Shouw, who has just departed on a scientific journey through a part of Italy. From statistical calculations recently made, it appears that Denmark, at the present time, possesses thirty-three manufactories in which the machinery is worked by steam. The collective force of this steam amounts to 350 horse power. Ten of these machines, including collectively 114 horse power, are of Danish manufacture. Denmark is in possession of eight steam-boats, estimated at 240 horse power. One of these boats was built at Copenhagen. The total amount of steam motion employed in Denmark is estimated at 768 horse power; 114 horse power being employed in the manufactories of the country. During late years the application of steam as a moving power has made great progress in Denmark, and there prevails a general desire for the formation of steam companies. The first steam machine used in Denmark was introduced in 1784. The oldest now in use was made in 1805. The old machines are now nearly all abandoned, and superseded by others constructed on new principles, and furnished with the modern improvements.

Norway.—Doctor Charles Matthew Bogge, rector of the Latin School of Drontheim, has been appointed by the government to publish, in the Norwegian language, all the best works on public education which have been written in the different languages of Europe. Doctor Bogge intends to commence his labours by a translation of the writings of Victor Cousin on the state of public education in Germany and Holland.

THE

POLYTECHNIC JOURNAL.

A Magazine of Art and Science.

"Felix qui potuit rerum cognoscere causas."—VIRG.

THE UNITY OF THE FINE ARTS.

THE different branches of the fine arts are all united in one and the same ulterior aim—to convey to the human mind *the sensation of the beautiful*—and by this similarity of object it is that Art becomes the foster-sister of Science, since the aim of the latter is to cultivate and improve the mind by communicating the *knowledge of Truth*.

Not only in their ulterior aim, but also in the objects treated, are the different branches of art united; for the essential character of Poetry and Music, as well as of Painting and Sculpture, consists in representing, in a harmonious form, the objects of nature—the interior nature confined in the soul of man, and the exterior nature exhibited in the universal creation. The former, which the significant profoundness of the language of old has dignified with the sensitive name of μικρόκοσμος (the world in confinement), consists in that world of feelings and ideas which are existing within the human mind, and become, in the well-cultivated, by their harmonious extension, worthy representatives of the universal harmony in the exterior creation of God; it becomes, as well as the latter, a deserving object for those who cultivate *beauty* in presenting it in their artistical productions; and here, again, art is intimately connected with science, for the object of the latter is to make known the interior nature of man and the exterior nature of things (μικρόκόσμος, and μακροκοσμος), while it is the province of art to exhibit their beauty and harmony.

The preceding observations contain the leading principles under whose influence we have prepared a series of articles, which we purpose laying before the readers of the *Polytechnic*. We are not ignorant that these principles, being of a general and extended character, may at first sight appear rather vague and inconsistent; we fear that some may, *ab initio*, not justly appreciate them; but we trust that even those who are disinclined to taste the substance of knowledge from the spring of abstract principles and maxims will be gratified by the perusal of our articles, which we intend to render at once amusing and instructive.

In directing the attention of our readers to the essence and nature of the fine arts, we commence by remarks on the poetical art. Poetry is the "first-born offspring" of the human mind, pregnant

with the ideas of beauty and harmony. The poetical genius possesses this characteristic distinction—that the ideas of the moral and physical world are versified by a creative power in the mind of the poet, from which they issue forth in a poetical form, communicating to the soul of man the delightful sensations of that same beauty and harmony which is living within the mind of the poet. The art of poetry is distinguished from the other branches of the fine arts, as it conveys the ideas of beauty, without the aid of tools or materials, directly from the mind of the artist to the sensation of the hearer, employing no other medium than language, which furnishes the truest and most proximate interpretation of thoughts. Beautiful and harmonious ideas are consequently the essential characteristics of poetical productions, while the *form*, namely, *Rhythmus, versification*, and *rhyme*, are only its secondary, however indispensable, qualities. In this point of view we often meet with lamentably erroneous conceptions concerning the appreciation of poetical works, since superficial critics are disposed to lavish their utmost praises on such productions as are distinguished by elegance of diction, by purity and euphony of versification, while the works so lauded are miserably deficient in the more important and essential quality of beautiful ideas; but the true genius always vindicates itself in the course of time, for the *form* is subject to continual refinement and alteration, while the *essence* preserves through all ages its eternal character of unadulterated beauty. We shall endeavour to manifest the truth of this observation by an example.

Nobody will dispute that, for instance, the poetical productions of Moore, *quoad form*, by their uncommon sweetness and elegance of versification, are superior to anything that emanated from the pen of the greatest of poets—Shakspeare; but, though far from disputing the merits of the former, we are sure to meet with the approval of every man who is not deficient in a susceptibility for true poetry, when we declare that the poetical value of Shakspeare's genius is infinitely and immeasurably the greatest. And in what consists the undisputed sovereignty of the latter? In what consists this wonderful power and vigour with which he rules over the dominion of poetry and fills the mind with the delightful sensations of poetical beauty? Why is he the king of poets? Because he is the true pupil of nature—because from his infancy he has drunk from the breasts of that *alma mater* the genuine milk of poetical inspiration—because that nurse, in her maternal fondness for her beloved and selected pupil, has communicated to him that mysterious spell, by which he alone among thousands was enabled to enter into the sanctuary of beauty and harmony, and to observe, with unrestrained eyes, the secret world deposited within the human breast, and to become intimate by means, as it were, of a prophetical intuition, with those sacred and sublime mysteries, which other less favoured disciples of poetry only perceive in moments of fugitive enthusiasm, or by the painful and irksome labour of study and tradition.

We have designated the subject and task of true poetry to be the communicating to the mind the sensation of beauty and harmony, by the *medium* of language, and proceed in asserting that the sub-

ject and task of the musical art are the same—communication by the medium of melodious sounds and harmonious *accords*. We shall endeavour to demonstrate that unity of the ulterior aim of both arts, notwithstanding the difference of their *medium;* but we cannot omit noticing this remarkable difference between them, that the poet is not subject to any error or mistake. With regard to the true interpretation of his ideas—if he be only a true poet—if he have a genuine poetical inspiration—then is he sure that his medium—*language*—will furnish him not only true representatives of his feelings and ideas, but even in his epithets he will be supplied with every modification he could desire; and therefore he must succeed in transferring to every susceptible mind those *identical* sensations which are prevailing in his own. The musical artist, on the contrary, is not provided with such definite interpreters of his conceptions—his materials, the different sounds of the musical scale, are by no means apt in themselves to represent or convey adequately any thought or sensation; isolated, they are void and insignificant, and it is only by their modification, by their combination and arrangement, that the artist, by the magic touch of his genius, converts those dead and unmeaning letters into a most expressive and powerful language. From these truths it is evident that those musical composers who have not the impress of genius are exposed to errors, and while they endeavour to manifest by their productions the interior sensations of their mind, they meet with a humiliating disappointment, and fail to awaken in the breast of the hearer a corresponding sensation. By this deficiency in the definite signification of the musical materials in themselves, together with the pleasure of hearing sounds well combined, even if they are not the interpreters of a deeper musical idea, it is that such men as have the talent to unite and arrange sounds into pleasing but insignificant melodies are esteemed, not only by themselves, but by the public in general, as musical composers; yet they do not merit this title in a greater degree than he that of a poet, who has the power of expressing a common and trite thought or feeling in correct and well-sounding verses. He only deserves the name of a true and genuine musical artist, whose mind is impregnated with beauty and harmony, whose genius produces clear and distinct ideas, and who, with this most essential quality of the artist, combines the secondary talent of revealing his interior sensations in a melodious and harmonious form; and here, again, we see the confirmation of our leading principle, that *the genius of art* is one and the same in every artist, but the artistic talent varies not only according to the principal branches of art, but is even accommodated to an infinite number of subdivisions, and over all and each of them, in their delightful variety, presides and rules the divine emanations of beauty and harmony—the genius of art.

If, however, we stated that the musical artist has the task of conveying distinct sensations to the soul of the hearer by the combination of sounds, we are not willing to insist that those sensations should bear such a fixed and logically defined character as we are entitled to expect from the poet. The latter is enabled to enter into the dominion of abstracted thought, and to clothe even the grey-

coloured tree of metaphysics with foliage—with the green leaves and gaudy flowers of poetry, as we all are aware who remember the most philosophical, and, at the same time, powerfully poetical soliloquy of 'Hamlet;' but these subtile regions are certainly not penetrable to the musical artist; his dominion is not so much that of the intellect as of feeling. Music is the language of the heart—the powerful interpreter of sensations—the sweet messenger of tender affections—the awful harbinger of contending passions. The melodious sound steals through the ear into the inner soul and raises there, after the image of the artist, the sweet sensations of innocent love or the ferocious emotions of burning passion—the peaceful impression of domestic happiness, or the stirring excitement of energetic ambition.

The reflecting reader cannot fail to observe that, notwithstanding the remarkable points of difference between the medium of the poet (*language*) and that of the musician (*the musical scale*), there exists between these two a certain affinity in this respect,—that the musician, as well as the poet, is enabled to combine his materials in the most various forms—to unite the parts and fragments of his artistic productions in a consistent whole, and by the guidance of one prevailing and connecting idea, to carry the delighted attention of his hearer through a series of scenes, through the waving sea of continually alternating emotions, passions, and sensations, while each scene forms an essential part of the whole—while all the different sensations contribute to produce one great and combined impression on the human mind, namely, beauty and harmony. This wonderful power of expansion and of divisibility of the materials of poetry and music is apparently wanting in the materials of the painter and sculptor; their art is circumscribed by the character (if we may be allowed the term) of their medium; but true genius is omnipotent, and bursts its way through the confining bounds of material tools. The pencil and the colour are gifted with a creating power by the magic inspiration of the painter, and the inanimate marble becomes a living interpreter of the artist's conceptions. Whoever has been happy enough to see some of the masterpieces of Raphael will agree with our assertion, that the painter, as well as the poet and musician, may unite the most various modifications and the most intense sensations of artistic beauty; that his power of manifesting these sensations and modifications, and communicating them to others, is by no means inferior to that of the poet and musician. How particularly the art of painting may be rendered available for this expression of a consistent series of ideas combined into one undivided whole, has been eminently exhibited by our own immortal Hogarth.

However strange it may appear, we are convinced that not only the painter but the sculptor also is entitled to claim an equal rank with the poet in the detailed and expressive manifestation of the *genius of art*—beauty and harmony. We instance *now* only such works as 'Laocoon' and similar remains of antiquity. May we go so far as to state that the art of *architecture* is not excluded from the sacred unity of the *fine arts*, but that genius may depict, even in the symmetrical combination of stones, ideas and feelings, and may unite them in an artistical composition, capable of being minutely

compared to, and being placed at the side of, the most celebrated efforts of poetry in the most flourishing ages of literature.

These fugitive remarks on the different branches of art are intended to convey to the reader our *method* of considering artistical productions; the value of that *method*, and its ability to unite in a sympathetic view all the rays and fragments of beauty diffused in the various compositions of art, will become, we trust, evident, when it will be permitted us in a future paper to direct the attention of the reader to one particular branch of art, and to the especial consideration of selected productions. We would venture to assert that this synthesis of critical arrangement will prove much more instructive and valuable than the most correct analysis of artistic productions, since the latter affords only the knowledge of fragments, while the former presents to the critical eye the genuine character of the whole work of art in connexion with a rare and dignified standard to test the degree of its value.

MEMOIR OF LIVERSEEGE.

Upon a plain grave-stone in the church-yard of St Luke's, Manchester, may be read, without other record or inscription, the name and age of one of whom the stranger might deem there was nought else to be recounted or remembered, save that his birth-place was that broad and busy city, and his resting-place that still churchyard; that he entered the career of life with the million, but was early taken from the flock; that he had lived briefly, and died in the full bloom of manhood, and was silently and renownless gathered to his grave. There is no announcement that the mouldering dust beneath that simple slab was ever animated by a spirit that had left immortality behind it in the presence of an enduring fame; or that he who passed in the world as Henry Liverseege, had built up for himself a monument beyond the tomb, which had its foundation in the bright conceptions of genius. But, like the gifted ones of heaven and the famous of earth, Henry Liverseege has left behind him his monument in his works!

Apart from the mental employment engendered by his ambition and pursuits, his was a monotonous career; and of the stories that tell themselves in his simplest pictures, there is none so short and uneventful as the story of the painter's life. He was born in Manchester, on the 4th of September 1803, of humble parentage, his father holding a situation in one of the factories, and perhaps not in circumstances to have given him the education which it was his fortune to derive from the kindness of an uncle (Mr Green), to whose benevolent care he was transferred from the first thirteen years of his boyhood. Like most persons who have distinguished themselves in after-life in any ennobling pursuit, Liverseege mani-

fested in youth a tendency towards the study which engrossed his ambition in manhood; and he indulged his pencil as a boy with early sketches and indications of his after-tastes. It has been said by an old schoolfellow of the painter's, a pleasant and fervid follower of the muse, that these early dashes of his youthful pencil were marked by touches of uncommon spirit in their execution, while in conception they afforded a key—perfectly in accordance with the character of his subsequent works—to the tone and bias of mind which loved to dwell upon fanciful or supernatural themes whenever it was under the depression of a gloom that often pervaded it, yet in its brighter moments, which were also frequent, ever reverted to the tender and touching influences of domestic nature, and dwelt upon the varied and interesting pictures of English peasant life. His career as an artist began with copying fine paintings of old masters —commenced its second epoch with better prospect of emolument, and less of fame, in the painting of portraits in which he took more success than pleasure, and terminated in a brilliant series of original conceptions and illustrations. These fulfilled for him the ambition of his art; but we must rather regard them as beautiful promises of the excellence to which he would have arrived, than as the last attainments of genius that burned with the flame of its own secret inspiration, and inspired to a larger share of greatness than the world either dreamed of its achieving, or was fondly waiting to bestow.

There is no doubt but Henry Liverseege had given us but the rainbow of his future fame, when death, paralysing the fulfilment of projects nobly conceived, and stemming the torrent of honourable enterprize, found means, in the scene of the 'Expiring Painter's Closing Moments,' to illustrate with relentless pencil upon the dark canvass of destiny the poet's sometime truth that

> "Fame is the spur that the clear spirit doth raise
> (The last infirmity of noble mind)
> To scorn delights and live laborious days;
> But the fair guerdon when we hope to find,
> And think to burst out into sudden blaze,
> Comes the blind Fury with th' abhorred shears,
> And slits the thin-spun life."

It was exactly thus with poor Liverseege, who died within the completion of his twenty-ninth year, on the 13th January 1832. We cannot find, nor have we ever heard, that this early demise of the young painter was attributable to any mental affliction. In his short life he seems never to have wanted comforts; never to have known even an approach to the worst privations of actual biting poverty; the crushing of hope, the desertion of friends, or even the disappointments of ambition. All through his short life he was employed —all through successful; he had burst easily all barriers of seclusion and obscurity; he was in the full pursuit (and in the full occupation of that pursuit) of all in which his mind delighted, and to the goal which he had before him he was ever cheered onward without a solitary repulse. The poetry of his young existence does not appear to have been visited with one unmerited blight. His mental hopes were never, like the genius of that poor sensitive flower Keats, "snuffed out by an article;" domestic misery had

not, as with Byron, laid low his household gods; the peace of his life, the even tenor of happiness in his domestic circle, appear to have been alike unbroken and unchanged. A vague rumour of some inherent dislike on the part of his father to his unoffending son, has been contradicted by his dearest friend in his biography, and by himself in one of his best pictures, in which the elder Liverseege sat for one of the most prominent and characteristic figures of its striking group.* To his uncle he was endeared by gratitude for the exercise of a not less than parental love, the great blessing of education, and the bestowal of every considerate attention and regard: the affection of his mother clung to him fondly through life, and fell upon him in all the fulness of honour when, in the last fainting flicker of a fainting spirit she gave him a blessing with her dying breath: his sister's love, and ever ready compliance with his wishes, follow him endearingly through all his pictures, where in various attitude and character a female figure was to be painted—whether in the earnest tenderness of the rustic sister of the recruits, the silent soul and heaven-communing of the young and beautiful visionary, the love and loveliness of his gentle Desdemona,

"Whose sweet endurance all her wrongs forgave,"

or that more pious creature of spiritual grace who, without a thought or touch of this world's leaven, is kneeling in reverential humility and hope of heart until God's delegate upon earth shall crown her with his holy benediction. And this sweet sister, so often the companion, and in one sense the subject of his pencil, was with her kind aunt, affectionately tending the young painter to the last. Beyond the consolation of this reflection, Miss Liverseege is in a manner rewarded by being identified with the fame of her brother, who painted her likeness in his picture of 'Catherine Seyton.'

It would thus appear that the genius of Liverseege having conquered the very little it had to contend with in the way of worldly or pecuniary opposition, was still less trammelled or clouded by domestic care or trouble; nay more, that love in his family circle had

"United all its forms and influences"

to bring happiness about him. What then was that sorrow which Mrs Swain, without due regard to the moral meaning of the word, or else putting that meaning out of the question, miscalled affliction? What was it that infused sensitiveness, almost amounting to temper, into his disposition, imbued his mind with a tendency to brood over the gloomy phantoms of its own creation—gave to his fine sensibilities a touch of melancholy that partook of most painful character and interest, and seemed to make despondency a part of his nature—often helped him to complaining, much tinged him with irritability, and sometimes soured his content? Alas! the want of that blessing whose absence detracts so much from the enjoyment of every other, health, and the presence of a delicate constitution, a restless thought of soul, a busy imagination, a weak frame, and a gradual wasting of all corporeal vigour and youthful strength, until existence

* That of the Sergeant in 'The Recruit.'

finally foretold its own close; the body shadowed forth its quittal warning to the spirit, and the last feeble struggling of his incurable malady fell upon him with the sadness of their awful prophecy, and imbued his mind with the conviction that he was soon to die; and with this conviction, inasmuch as he could not refrain from cherishing it, he committed a sort of involuntary suicide. Through it he allowed his mind to prey upon his body, and his body again retorted its paralyzed activity and inert lassitude upon the mind. In one word, his animal spirits grew lethargic, and he gave way to this lethargy, which, bodily speaking, was only broken by fitful spasms of pain, and mentally by projects and conceptions of noble design, which flashed before his genius like sparks that were to go out in birth, so hopeless was he of ever living to work them into flame. If a bright hope ever appeared to his mind, his gloom quelled its lustre, and Liverseege reversed the order of the fable, metamorphosing the phœnix back to its ashes!

His poet biographer mentions the indulgence of such feeling in the first lines of the following paragraph, in which he tells the story of the painter's departure out of this life.

"There is oftentimes a morbid and gloomy presentiment of death, a vague and indescribable restlessness of mind, that inflict their miseries on the worn and debilitated constitution of those from childhood afflicted with an incurable disease. Thus it was with our artist for some time previous to his dissolution; and although he had not appeared alarmingly unwell, yet a heaviness of spirit too frequently depressed him; a lethargy seized his powers, which increased more and more to his death. The circumstance which first alarmed his relatives was the swelling of his limbs: yet only the day before his decease he had been arranging with his aunt, Mrs Green, to purchase him a pony, for the better exercise of his weak frame. On that evening, the last he was permitted to spend with his relatives, he sat by the fire with his head bent over his knees, his frequent custom when in pain, and his hands tightly compressed together: thus he continued moaning and musing for a considerable time; all at once he started up, looked earnestly at his aunt, and said, 'If I die, take care of my sketches; they are valuable.' He wished to retire to rest, but there was an anxiety and want of confidence in his manner. 'Aunt,' said he, 'do you think you could hear me if I were to knock?' She assured him that she could. The moment he entered the chamber he leaned as if exhausted upon the chair, and said feelingly, and, as his sister afterwards thought, with more than usual affection, 'Good night, my sister. I hope all will be well: it is in God's hands.' These were the last words he was ever heard to utter. His aunt heard him cough in the middle of the night, but nothing more; she listened attentively, but not the slightest token seemed to request her aid. In the morning his sister took him coffee, but returned, saying he was asleep; twenty minutes elapsed, and again she approached him, but still he lay in slumber, deep and heavy;—it was a prelude to the sleep of death.

"She grew instantly alarmed, and called for her aunt, who employed every means to arouse him, yet in vain: he never moved. She then hurried out for assistance, but half an hour was lost ere it could be procured, during which time he continued to lie in that deathly stupor.

"The remedies of the physician proved fruitless; the stimulants acted slightly upon him; he half opened his eyes, raised his hand to his heart, and expired without a groan or struggle. In the moment of dissolution his countenance was overspread with a dignity of expression which astonished all present; his soul seemed visible as it quitted the frail and mortal tenement of human existence. At the *post mortem* examination the immediate cause of his death was clearly ascertained. The lungs presented a singular appearance; the left, having never been exercised, had grown hard and solid; and the right one, in consequence, had become unusually large and distended, and the bursting of it caused his death."

Of the domestic history of Liverseege there is little or nothing to

record. From the age of thirteen upwards, with the exception of a few visits to the metropolis, he passed the whole of his life in his native town of Manchester, and almost all under his uncle's roof. His pursuits were unvaried, if we except one slight deviation in his younger days, when he became one of a corps of amateur dramatistes, and is said to have played old women to the life. His pictures were usually sold among his friends. When in London he received considerable attention from those to whom his genius was known; among others, from Etty, the Royal Academician. Heath gave him a more solid proof of respect for his talents by commissioning him to paint twelve subjects for the 'Book of Beauty,' which, however, he did not live to commence. This commission, we believe, was given in Manchester, whither the engraver was pleased to compliment the painter by saying he went "to see Liverseege and the railway." The Duke of Devonshire also commenced —and, had he lived, would doubtless have followed out—a course of liberal patronage towards him, for which Liverseege expressed himself highly grateful; and some urbane courtesies bestowed upon him by that nobleman during his last stay in London, made no small impression upon the artist's sensitive mind, delicately alive as it was to kindness, and ever tenacious of neglect. His pictures were almost all, in the succession in which they were painted, exhibited in the exhibition at Manchester with crowning applause. Those which subsequently appeared in the gallery of the Society of British Artists in London, attracted as much approbation from less impartial critics, and in a wider field; and one composition from Scott and one from Shakspeare (Sir Piercie Shafton with Mysie Happer, and Hamlet) confirmed the risen reputation of Liverseege from the walls of the Royal Academy. This was in the year '31, but he only just lived through the following twelvemonth. We have no other details wherewith to interest our readers relative to the young painter's career, and perhaps we cannot better close our brief notice than with the sketch given of his person and manners by one to whom he was from childhood intimately known.

Liverseege was somewhat under the middle size, thin and spare, slightly deformed in the left shoulder; and refuted in himself the idea that the noblest soul is the most splendidly lodged. His complexion was colourless; his look inquiring and anxious; and his mouth singularly expressive, with a slight shade of irritability in the curve of his lip: much of this arose from long sickness, for his natural disposition was open, cheerful, and generous; his sentiments elevated; and his manner, with some slight touch of the theatrical, easy and courteous. He had a strong consciousness of genius about him, and often alluded to it, but never rendered it offensive. He admired the talents of others, and loved to dilate upon the merits of the chief leaders of the English school. His idols were Reynolds and Lawrence; but he preferred the latter, because his minute marking assimilated more to his own style. In his dress and appearance he was neat and gentlemanly; and though he was not a little vain, his vanity was not of the kind to prove offensive. In company he

was sprightly, witty, and humorous; delighting in the remembrance and recitation of any passage of the poets which could amuse or illustrate the conversation. * * * * *

And now let us consign the social memory of Henry Liverseege to those who knew him in the world—who fostered his genius with the fervour of a friendship that exceeded even admiration of art—who held companionship with him through the dawning, the developing, and the realizing of fame—who fed hopes that would else have died—who encouraged ambition that had otherwise slumbered in languor of soul—who cherished love-begot gratitude, indulged infirmity, and softened pain—who were props supporting the stem of the delicate flower that grew in sickness, was unfolded in sunshine, and drooped its head in the bright hour of the morning—these, faithful and friendly in life, and sorrowing sincerely when life's lamp was alike unfed by oil or flame, will do justice to the man, and remember him with such meed as he deserves to be remembered. Henry Liverseege had the soul and sense to take nature for his everlasting model: when he originated, he originated out of the heart of life—when he illustrated, he made life sit for his illustrations. In his paintings from Shakspeare, Scott, and Gay and Butler, and more especially in the more difficult of them, he always procured living models. Take, for instance, the two subjects of 'Christopher Sly and the Hostess,' and 'The Black Dwarf,' two of his most admirable paintings; we have it on record that even for these he found life representatives, and the anecdotes that attach to each picture are sufficiently amusing. As regards Christopher Sly, it "was long before he could find such a cobbler as he desired; at length he met with a man he thought would suit, and, having placed him in his studio, set down a bottle of strong gin beside him, saying, 'Drink whenever you please.' The spirit of the cobbler, being one of those that must lie in steep some time and become half corrupted before it rises, refused to stir; he sat sober as a worshipful judge upon the bench: another bottle of gin disappeared in the same way as the former, but the son of Crispin sat steady as ever. 'Begone!' exclaimed the painter in a passion, 'it will cost me more to make you drunk than the picture will procure me.'" 'The Black Dwarf,' it will readily be believed, was a sort of poser in the way of tumbling upon an original; but notwithstanding the difficulty of procuring a sitter sufficiently hideous or misshapen, he at last discovered a miserable dwarf who afterwards sat to him, and displayed on the completion of his likeness great wrath and indignation at what he considered the malicious mode in which his person was delineated: he would not believe that it was anything like *him*, and left the room unpaid in high dudgeon, grumbling hoarsely as far as he could be heard—for this fragment of humanity had the voice of a giant. Liverseege's account of the whole affair was excessively whimsical.

After these we would especially point attention to 'Friar Tuck,' whether asleep or in his jovial mood of downright bacchanal—to 'Falstaff and Bardolph'—to 'Sir Piercie Shafton and Mysie Happer'—to 'Hudibras in the Stocks'—to 'Touchstone and Audrey;'

and, of more serious caste, to 'Hamlet,' and to 'Othello and Desdemona,' as being out of all sight the best of his illustrative pictures. Each of these subjects is too full for criticism here. The same consideration must teach us to refrain from dwelling upon the exquisite pathos of most of the domestic pictures — their vivid delineation — their strongly marked features — their expressive contrasts — their natural truth — above all, their powerful nationality, and their picturesque identity — appealing resistlessly to the feelings with every thing that betrays and characterises the hearts, the affections, the old associations, the habits, and the attachments of the English painter's native land.

THE SUPPLY OF WATER TO LONDON AND PROCESS OF FILTRATION.

The more a nation advances in civilization, the more numerous become its wants, and it would seem as if it was in the very nature of progression never to be satisfied; that which was considered before obtained as the reality of perfection, when gained being found insufficient. The truth of this position will be seen in the brief account here given of the ancient supply of water to the metropolis, and what it is at the present day.

The environs of all the great cities of antiquity are distinguished by those gigantic aqueducts, the immensity of human labour displayed in which is the admiration of posterity. According to Strabo, that at Rome called the New Anio consisted of a thousand arches, and was six miles and a half in length; and the Aqua Martia, which received its waters from the Tibur, thirty-six miles above the city, had a length of forty-eight miles in a wandering course, part flowing through a subterranean channel; the supply was ample for a population of four millions of souls; the nine earlier aqueducts distributing into the city 14,008 quinarea, equal to twenty-eight millions of cubic feet, which, in addition to those before mentioned, must have exceeded fifty millions, which gives thirteen cubic feet, equal to a hogshead and a half, to each inhabitant. But notwithstanding the supply was thus ample, and free to all, as 600 fountains showered their waters in every quarter of the city, yet the expense of procuring it was considerable, the introduction of it by means of pipes to houses, excepting those of the rich, was too costly to be in use, as the larger kind called mains they knew not how to fabricate. The incredulity of the Roman statist would have been expressed had he been told that, in an after age, a sum not amounting to one dinarii a-head, was found amply sufficient to allow an unbounded supply of the first necessary of life to be poured into the dwelling of the humblest citizen of a city, almost equal in extent and magnificence to his own. During the Roman Saxon rule and previous to the year 1236, no account is to be found of the means by which water was supplied to London, but from the traces of wells which are found in digging for foundations at the depth of fifteen and eighteen feet from the surface, and also from those remaining in most of the ancient buildings of the metropolis, it may be concluded that they were the chief source of supply, the town being even at that time too extensive to depend on the river alone, the expense of conveying water from which by hand, at a time when horse carriages were almost unknown, must have made it too dear for general use. In the beginning of the reign of Henry III leaden pipes were first introduced: they were laid from the spring at Tybourne, or Tyghe-boune, and the great conduit, a

castellated cistern of stone, was erected in Westcheap in 1285; in 1401 the Tun at Cornhill was constructed, and supplies were brought from Hampstead, Muswell hill, Hackney, and Mary-boune; more conduits were erected in the year 1546 in Coleman street and Lothbury. According to Pennant, the Lord Mayor had a banqueting house at Tybourne, from which nine conduits in the city were supplied; immediately after his accession to the city chair it was the custom for himself and Aldermen, attended by their ladies, to go on horseback in great state, and taste the water, and after being magnificently entertained there, to return into the city. The Thames water was first brought into the houses of the citizens in 1582, in the reign of Elizabeth, by engines which were made by a German of the name of Peter Maurice; it was carried over the church of St Magnus, and an elevation being thus obtained equal to the highest ground in the city, which was the north corner of Leadenhall street, was supplied to all the houses in Thames street, New Fish street, and Cornhill; here the main pipe rose into a standard, and poured forth a supply from eight mouths. The principal conduits at this time were at Cripplegate, Paulgate, Leadenhall, Fish street, Oldborne street bridge, and Aldgate; Stowe's account of that at Fleet bridge makes it very magnificent; at the top was a figure of St Christopher, and lower down Angels with sweet sounding bells before them, which, by means of an engine in the Tower, "they dyvers houres of the daye and nighte chymed suche a hymne as was appoynted." Barton says, in West Smithfield was a pool, called Horsepool, and another in St Giles's, and divers fair springs by which the city was supplied. All these conduits were destroyed in the fire of 1666, the account of which by Rolles is curiously given in the 40th chapter, called Meditation. He says, "As nature by veins and arteries, some greate and smalle, placed upe and downe in alle parts of the body, ministreth blood and nourishment to every part thereof, so was that wholesome water, such as was necessary for the good of London, conveyed by pipes, wooden or metallic, as by veins, to every part of that famous city; if water is as we may call it the blood of London, then were its several conduits, as it were, the liver and spleen of the city."

The first water company, subsequently called the New River Company, had its origin in the plans of Sir Hugh Middleton. Ben Jonson, at the time says, "We have water companies now instead of water carriers;" and gives a portrait of one in his play of *Every Man in his Humour*. Sir Hugh embarked in the undertaking his whole fortune; the original number of shares were only thirty-six; before it was half completed many of the holders despaired of the speculation, the funds being exhausted, and an application was made through the Duke of Buckingham to King James, and by his persuasion the King was induced to become a partner in the enterprise, and in 1619 advanced the sum of 6,437*l.* 11s. 10½d. for which nineteen additional shares were created. On reaching London and immediately after the opening, the dividend on each share was 11*l.* 19s. 1d. but still money was required, and Charles I, rather than advance more, preferred to surrender his shares on having an annuity of 500*l.* secured to himself and successors. Sir Hugh divided this moiety into thirty-six, thus making what are called the Adventurers and King's shares equal in number; these seventy-two shares have been since divided into fractional parts, and a whole thirty-sixth share of the King's has sold as high as 10,600*l.* The reservoir at Islington is eighty-five feet above the level of the Thames: above that it is raised by a steam-engine of thirty-five horse power, and carries water into the third floors of the houses in the immediate neighbourhood, nearly the highest ground in London. The Chelsea company was founded in 1720 by act of Parliament; two years after the basin in the Green Park was formed, to supply Whitehall and parts of Westminster; they had also a reservoir and engine-house in Hyde Park; the latter was removed in 1828. At their commencement they had power sufficient for the supply of 10,000 houses, and their rates were lower than the New River Company; a new act was passed in 1782, in consequence of the damage done

to their works by the severity of the winter, to increase their capital; in 1767 the daily supply raised by them amounted to 1740 tuns, it was shortly after increased to 3,500, in 1809 to 6,500, and it now exceeds 20,000 tuns. In 1691 the York buildings Company was established. In 1810 there was a general complaint of the inadequacy of the supply of water to the metropolis, and it was proved in a committee of the House of Commons that it was insufficient; the theatres of Covent garden and Drury lane were burnt before any could be procured, and at the fire which took place at St James's Palace, the entire destruction of the building was at one time apprehended from the same cause. In the next year charters were granted for the establishment of two new companies, the Grand Junction and the West Middlesex, for the better supply of Paddington, Marylebone, and St James's; the want of supply was the only substantial reason given for their formation, as the rates were lower when there were only two companies in existence. These companies proceeded to erect works on a scale and system not hitherto thought of; by means of iron pipes and steam-engines water was conveyed to the top of the loftiest houses, the supply was almost unlimited, and the benefit was soon found not only in the increase for domestic use, but in the improvement of the sewers from the immense quantity of water daily passing through, and completely scouring them, and the ceasing of those offensive smells which had arisen from the gratings in the streets. The supply at first was afforded to the parishes of Marylebone and Pancras by an engine of thirty-six horse power, working ten hours a-day through a seven-inch main (area thirty-five inches), and was afterwards increased to two engines of seventy-horse power, which worked sixteen hours a-day, each raising 2,600 hogsheads an hour, through a main thirty-one inches, an area of 456 inches, and twenty-one inches with an area of 346. To these shortly after were added the East London, the South Lambeth, and the West Middlesex, for the supply of Hammersmith and Kensington.

The ample supply of water which these new companies, in conjunction with the old, afforded to the whole of the metropolis, dividing it, as it were, into three districts, viz., the north of the Thames, and that of Tottenham court road, and the south of the Thames, including Lambeth, Southwark, and the adjoining parishes, did away with any just cause of complaint with regard to the quantity, but the quality remained the same; for years the fluid with which the cisterns were filled was found nauseous to the taste, deleterious to the health, and hardly fit for the commonest domestic use; such general complaint had arisen that it was recommended by Sir R. Peel in 1830, in committee, to appoint a competent engineer to inquire if water could not be brought from the Thames above Richmond bridge, or from the river Colne, the expense to be borne generally by the different companies. The Grand Junction, we believe, was the only one that was willing that it should be attempted; but the others refused to co-operate, they being perfectly aware it might have been done, but did not like the expense, and the plan was abandoned. Complaints becoming more general, it became absolutely necessary that some means should be taken to remedy that which was becoming daily worse; the quality of the supply from the Thames, owing to the increased quantity of gas, manufacturing deposits, and extended sewers, being poured into its bed, rendering the water supplied little better than the scourings of a sewer. It is admitted that the river water, when free from extraneous substances, is in a state of considerable purity, and that though it is not as translucent as the Neva, the Volga, and some others, yet possesses properties which are not to be found in those celebrated streams. It has the virtue of purifying itself, and will afterwards remain in that state longer than almost any other; and for that reason is always preferred by sea-going ships; and none are found to be of equal value for the brewing of porter, &c.; that it contains only a moderate quantity of saline particles, and those of a kind which do not render it unfit for domestic use; that it is only when approach-

ing London it becomes loaded with filth, the greater part of which matter is only suspended in it, and requires but rest to subside. It takes, however, a long time to allow of the complete separation, which, when moved, is liable to be again diffused through it, and give it a tendency to putridity. It was ascertained that the river is in its purest state at low tide, and most loaded with filth and extraneous matter at half ebb; also that the wells on both sides of the river are affected by the rise and fall of the tide, yet are perfectly pure, which purity they acquire by their percolation through the different strata between them and the river, and that the water of the Thames, when passed through a mechanical filter, was equally so. An opinion prevailed among foreign chemists that, although a moderate quantity of water might be brought to acquire pureness by filtration, yet that the attempt to effect it on a great scale would not be found to succeed when taken from a source excessively impure; that the earthy, animal, and vegetable particles would be only held in solution, and still remain; also, that if it did acquire a greater degree of purity from the process, yet that a large surface exposed in a tank in a quiescent state, would, from the fermentation which takes place, soon lose whatever purity it had acquired from the filter. It was thought that, submit the Thames water to whatever process you may to make it fit for general use, it never can be equally wholesome for draught as that drawn immediately from the spring. This, to a certain extent, may be true: yet, as all springs must partake of the qualities of the soils they pass through, whether earthy, calcareous, or metallic, so they must all, without exception, from the length of the process of natural filtration, acquire the property called "hardness;" in that state the element loses in some degree the vitality it would otherwise possess. It is well known to gardeners that watering flowers immediately from the spring is hurtful to them, and it is a common custom to fill a reservoir for future use, and the double labour well repays the toil.

To prove whether the Thames water could by filtration be brought to such a state of purity as to render needless the vast expense of bringing it from a distant source, and previous to the formation of filtering beds on an extensive scale by the Chelsea Company, an experiment was made on a quantity of the Thames water, taken from the mouth of the King's Scholars' Pond Sewer at Westminster; it was opaque with filth, and in the worst possible state of impurity. After a week a considerable quantity of black matter subsided from the water, which smelt, however, as fetid as at first, and this was only in part removed on being passed through a layer of sand and charcoal six inches in thickness. Some time after it became much clearer, and the whole sediment had risen to the surface, where it formed a strata half an inch in thickness. The smell still continued as offensive as at first, indeed rather more so. The process of depuration which had thus commenced was continued for some time, when it became perfectly transparent, although still retaining something of a dingy colour. The next change was the separation of the scum into masses, or flakes; to these, as well as the scum, a number of air bubbles were attached, to which they owed their buoyancy. After some time the masses again subsided, leaving the water almost totally free from any extraneous substance. The quantity of gas discharged was inconsiderable when the process of depuration appeared complete. It was filtered through paper, and became perfectly transparent, without colour, taste, or smell. By appropriate tests it was found to contain sulphuric acid, muriatic acid, and magnesia; but neither ammonia, iron, nor sulphur was to be detected. The result of this analysis proved that although the water had by the depurative process freed itself from the great quantity of organic matter contained in it, and gained an almost entire state of purity, yet the quantity of saline matter was increased fourfold, generated from the animal bodies or substances poured into the river, the softer parts of such bodies being destroyed, but the salts remaining. These salts are known to act on water as quick-lime would do, and render it incapable of undergoing the putrifying

process again, and are the cause of its wholesomeness and of those peculiar properties which we have before mentioned the Thames water is found to possess.

It having thus been proved that, by the process of mechanical filtration, the water of the Thames becomes purged of all deleterious and offensive matter it might have acquired in its progress through the capital, it was reasonably thought that by applying the same process on a large scale the same effects would result, and that to bring it from a few miles distant at a vast expense without a certain prospect of success would be a work of supererogation. It was known that exposure to the air improves the quality of water, and that almost by exposure alone in shallow vessels any acquired impurities are removed. We now proceed to show the means by which the process of filtration of the Thames water is performed by the Chelsea Company.

In the beginning of 1810 the Chelsea Water-works were removed from the canal originally made for their use from the Thames, now the Belgrave Basin, to a piece of ground on the banks of the river, nearly opposite the Red House, Battersea; they occupy about seven acres. Till the late alterations they got their supply from a building called a Dolphin, placed in the river about 100 feet from the left bank. This building was made of brick to within 8 feet of the surface of the stream at low-water mark; above it was a structure formed of iron pierced with holes in many parts, through which the water passed, and this in some respects acted as a filter, by preventing any large extraneous body from entering; a little higher up was the mouth of a large sewer; thus this rude contrivance could have had but small effect in purifying the water. This building has been removed, and the main pipes are now carried across the bed of the river to within 100 feet of the Surrey side at low water, where it receives its supply; and, as few land drains on that side open into the stream for many miles, it is in a great degree found to be free from those objections occasioned by the more densely populated state of the northern bank. The water is received immediately from these mains into the first reservoir, the breadth of which is 70 feet, and the length 100, and it has 10 feet of depth; it passes from thence into a second basin lined with brick and stone, from which it is forced up into the southern reservoir, which is 160 feet in breadth by 300 in length, and the northern one, 540 feet by 140; both these reservoirs are lined throughout by brick on edge paving, and being placed at a considerable elevation above the filtering beds, the water passes from thence into the filters, two in number, the southern one 240 feet in length by 180, and the northern one 351 feet by 180 in breadth, the latter being constructed at a higher elevation than the other; having passed through both these beds, it is slowly received into an open culvert of about 15 feet in depth immediately from them; from thence it enters the mains which are affixed to the arch of the bridge which crosses the Belgrave canal, from whence the district is supplied. The formation of these filtering beds, and the great scale on which they are constructed, is deserving attention. The sides are formed of clay, and are raised about 12 feet above the level of the ground; they are covered with turf and strongly embanked; the bottom is also of clay of the depth of 18 inches. Upon this are placed upon the southern one 11, and on the northern 9 tunnels of brick, which reach from one end of the bed to the other, each is 3 feet in diameter and 2 bricks in thickness, and so constructed that every other brick being left out, it acts as a sieve, and the water has a free passage through; on all sides these tunnels are covered and surrounded to the height of 24 inches with small gravel stones; above these is placed a layer of concrete, made of broken shells, and upon that is spread a bed of coarse sand, upon which is another of fine sand; these two last beds are about 5 feet in thickness. Between the tunnels wooden troughs, 3 feet in length by 6 inches in width and 3 in depth, are placed on the sand about 10 feet distance from each other, their use is to

prevent the water from washing the sand into holes when it is admitted from the filter. The deposit formed by the water, which becomes mixed with the surface of the sand, is easily removed, and only requires once in a month or three weeks to be raked off to the depth of two or three inches, which is effected in a few hours; the intervals of removal depending to a certain extent on the action of the wind and tide. A steam engine of 120 horse power raises the water to the amount of 3,500 gallons a minute, or upwards of 5,000,000 gallons in the course of the day.

The expense incurred in the construction of the machinery, filtering beds, &c., connected with the process of purifying the water, has amounted to nearly 60,000*l.*

The limits of a notice of this nature will not allow of space to give an account of the means adopted by other companies to obtain a supply of pure water; that which has been undertaken and completed by the West Middlesex is gigantic, both in its conception and execution, and well deserves attention.

Whatever complaints are still made respecting either the quality or quantity of the water now supplied to the metropolis, at least it will be admitted that in no city of Europe is that supply more ample. What would be thought here, if the quantity required for the daily use of each family was every morning to be purchased from a water cart? and what indeed must be the quality of a fluid, brought from a distance, when tossed and shaken over the uneven pavements of the streets? It may be doubted if the waters of the Seine are more pure after receiving the scourings of Paris, than those of Old Father Thames at London bridge; there, no attempts have yet been made to crystallize its stream, and no complaints are heard; but here enjoyment has made us critical, and we must needs complain. It is true that Paris and most cities of the continent possess fountains from which the purest element is to be obtained; they are not only conducive to the health of the inhabitants, but, from the beauty of their architecture, form the most magnificent ornament of their localities; while here, the curious inquirer will occasionally in his search discover a few wretched wooden pumps, whose treasures are seldom sought for, except to supply a water-cart, or stay the thirst of some miserable being, unable to procure a more deleterious draught. In a future notice we may revert to the subject; the invention of boring for water, and the formation of Artesian wells in our metropolis, if carried out, might not only obviate all the complaints which have arisen, and still arise, as to the quality of water supplied for draught, but become one of the greatest ornaments of our city.

P. H. R.

HINDOO POPULAR SONGS.

The national ballads of all countries present in themselves interesting pictures of manners. We learn from them how variously expression of the same feeling may be modified by laws, religion, customs and numerous local circumstances, independently of the impress thought receives from language—the medium through which it is conveyed,—the mould, we may say, in which it is cast. It was once declared by a great statesman that he cared not who made the laws of a country, if he had the making of its ballads. But, however great may be the advantage of influencing opinion in his own nation by popular poetry, it must be still more important to the statesman to be able to discover the latent feeling of a people with respect to whom he exists in the unfavourable

relation of a conqueror. Though we cannot expect to wield with any success the language of that people, as an engine of instruction or persuasion, yet we may glean from it a knowledge of the degree of satisfaction or disgust with which the subdued submit to the foreign sway under which they are placed.

This is the situation in which England stands with regard to India, and we are sorry to observe, from specimens of common every-day Hindoo songs, which we have met with in looking over some late numbers of the *Bengal Hurkaru*, that much remains yet to be done, and indeed, it may be said, much the doing of which must be forborne, before an immense population can be so conciliated as to give assurance of stability to British power.

This mode of giving expression to discontent is, however, not new. About eight years ago a fanatical interference with the religious rites of the people produced much irritation; a song which then resounded through the streets of Calcutta was translated by the learned Doctor Tytler. It afforded evidence of a growing dissatisfaction at the attacks made on Hindoo customs, more particularly on the Suttee. It commenced thus:—"O Brother Bengallee, Hindooism no longer remains in Bengal," and proceeded in a strain of strong invective to attribute all sorts of evils to English influence. Farther provocation has since been rashly given, and songs breathing dissatisfaction have been composed even for the nursery. One of these ballads, framed for the purpose of instilling into infant minds hostility to the British yoke, runs thus:—

Come and see—come and see—
All the brave things doing here,—
See the great *feringe logue*,
Who are now so much in vogue,
Stuffed with wine and beer.
See a set of them approaches
In their thousand rupee coaches—
Baba mine—Baba mine,
You must ne'er drink beer or wine
As the white men do—
Baba, baba, you will never
Though you should be e'er so clever,
Earn until your dying day
Half of that man's monthly pay,
Though he be a stranger here,
A pourer down of wine and beer
And a *poggle* too.

We shall now give a specimen of the manner in which the passions of the adult population are appealed to. The following, we are assured, is a free translation of a song now generally sung by the natives of the central provinces:—

I.

There was a time when you and I went quietly to sleep,
And ate our rice all tranquilly, but now we wake and weep;
We had our free possessions then, and no one asked us why
We did not pay our taxes to the Monster Company.

II.

But times are altered sadly now, these cruel men of might
Come up and bid us lose no time in proving well our right;
And if we nothing have to prove, the most that we can do
Is to say to this great Company, "Right, Sah'b? what right have you?"

III.

But might makes right, and soon they'll come and strip us to the skin;
I've got three children at my door and I've got a wife within;
I've in the stable got a horse and bullocks in the yard,
But if I wish to keep them there I must work *very* hard.

IV.

For if I don't, they'll take my wife and take my children three
To be their slaves and work for them and ne'er again be free;
They'll take my horse, those stranger-*logue*, to ride about shikar,
And from the yard, like wicked thieves, they'll drive my cattle far.

V.

And what are we to do, my men;—my brothers one and all,
Upon you with my loudest voice and aching heart I call;
Take up your talwars in your hand and loudly sound the gong,
I doubt not there are thousands who will round our banner throng.

VI.

Oh! great we are in numbers, and in numbers there is might;
Like a river we will pour upon our enemies in fight;
And if we strive right manfully, we shall not strive in vain
To send our foreign tyrants back to their own homes again.

A literal translation of the last line would be—"To send the foreign fierce bulls back to their home in the sea."

We should hope that the consideration of this state of feeling will have some weight with those persons who, animated more by zeal than guided by prudence, are constantly wounding the prejudices of the Hindoos, and resorting to measures calculated to raise up insupportable obstacles to the pious object they profess to have in view.

LITERARY COINCIDENCES.

ALTER ET IDEM!

"Faded ideas float on the memory like half-forgotten dreams, and imagination in her fullest enjoyments becomes suspicious of her offspring, and doubts whether she creates or adopts." SHERIDAN.

We have often thought that posterity has been as unjust to the merits of Sophocles, as were his sons in his own day, when they endeavoured to supplant him by a charge of insanity. Euripides, the bard of Pity, as Collins styles him,

By Pella's Bard, that magic name,

according to many opinions, was the chief of the Greek dramatists—*chacun a son gout*, or, as we are on a classical subject, perhaps it would be better to cite Virgil and say, "*Trahit sua quemque voluptas!*" Now doctors differ and parsons too,—witness Parson Adams, who was wholly absorbed in the beauties of Æschylus, and had a sovereign contempt for all other Grecians. It is here humbly set forth that Sophocles was as entitled as his compatriots to the first distinction of Tragic Poet; in proof of which we need but quote

the opinion of the immortal Shakspeare, who did not think it derogating from his own mighty genius to look respectfully upon antiquity and dress himself in the glass of by-gone ages. This may seem to be somewhat obscure, inasmuch as Shakspeare, the reader will naturally say, does not give any opinion at all upon the subject, and never once mentions the name of Sophocles. To borrow or adopt the thoughts of others, nevertheless, is to grant them our approval, and in this view of the matter Shakspeare may be said to have given an opinion. But let us proceed to more immediate proof, by considering the fable and conduct of Sophocles' ELECTRA, and then showing that the Bard of Avon's HAMLET was, in a great degree, indebted to it for not only a considerable part of his construction, but also for many remarkable verbal passages!

Shakspeare's learning has been for a long time held as problematical (of course, here, the word *learning* means classical or scholastic acquirement); his genius and knowledge being undoubted. Now, what is here attempted to be proved is, that he actually did possess scholastic acquirement, and not in the second-hand way that many of his critics would assert.* Let us here notice a few assertions of those who have been adverse to the point of the present argument.

Rowe, in his life of Shakspeare, says, "that it is without controversie, that he had no knowledge of the Ancient Poets, as we find no traces of anything that looks like an imitation of 'em in his works." The same writer, however, admits that the 'Comedy of Errors' seems to have been borrowed from the *Menœchmi* of Plautus, though he asserts that "*there was no translation of it in his* (Shakspeare's) *time!* He continues: "'Hamlet' is founded on much the same tale with the *Electra* of Sophocles;" and goes out of the way of his subject to say, "there is in the first part of the Greek tragedy something very moving in the grief of Electra," as if he could not altogether avoid finding some identity between it and that of the Danish Prince, although he would not positively assert it.

"Some have imagined," says Johnson, "that they have discovered deep learning in many imitations of old writers; but the examples which I have known urged were drawn from books translated in his time; or were such easy *coincidences* of thought as will happen to all who consider the same subjects." There can be no doubt that men who think rightly and profoundly on the same subjects must now and then resemble one another in their most leading thoughts and conceptions, but when a similarity of peculiar idiom or diction is discovered in two distinct authors, it is plain that he who used the thought or phrase in the first instance has the only title to it, and though a compliment may be made to the reading of the second it must be at the expense of his originality.

But in contradiction of Rowe, Johnson says, that the *only* translation of Plautus extant in the time of Shakspeare was that of his *Menœchmi*. To reconcile these and many other conflicting opinions would be impossible,—so we shall proceed to the internal evidence of classical learning that is to be found in Shakspeare himself.

* Dr Farmer and others; for a refutation of whose opinions, see the learned Dr Maginn's papers in a contemporary Journal.

That he founded his play of 'Hamlet' on the story in Saxo Grammaticus is sufficiently evident from the names, locality, and incidents used; but that story did not furnish him with characters or sentiments, nor that melancholy morphew which hangs around his hero with such tender and mellowed grief! To say the boundless mind of our great dramatist could not of itself have imagined it would be literary blasphemy indeed,—but when we find a character of antiquity placed under similar circumstances, nursing her sorrow for the death of a father in lonely meditations—refusing to be solaced lest

"*She* should live
An utter alien to *her* dearest grief," *

philosophizing in nearly the same words, certainly in the same spirit, we must look upon it as something more than *coincidence*, and say that Shakspeare must have read the *Electra* of Sophocles and shaped his tragedy upon it. It is not merely the characters of Hamlet and the heroine of the Greek play which are nearly allied; both Gertrude and Clytemnestra strongly resemble: both were queens—both adultresses—and both of them had their hands imbrued in the blood of their lords and masters. The language of Electra's soliloquies and speeches (particularly in the early part of the play) to the chorus, and their replies and advices, must surely have been copied by the modern bard. The passage containing the question

Τίν ἄει
Τάχεις ὧδ' ἀκορεσον οἰμωγὰν;—

a remonstrance against her ineffectual sorrow, and the subsequent exhortation to submit to the common lot of humanity, most strongly seem to have been the prototypes of the King and Queen's consolatory speeches to Hamlet.

Speaking of the play in the tragedy of 'Hamlet,' Dr Warburton observes, that it appears from many reasons to have been Shakspeare's own, and that this was the occasion of writing it. "*He was desirous*, as soon as he had found his strength, *of restoring the chasteness and regularity of the ancient stage*; and therefore composed this tragedy on the *model of the Greek drama*, as may be seen by throwing so much *action* into *relation*. But his attempt proved fruitless; and the raw, unnatural taste then prevalent forced him back again into his old Gothic manner, for which he took this revenge upon his audience." Now here an acquaintance with the Greek drama, and an intimate one too, is apparent, for it must only have been through a knowledge of the original that he could ever have been induced to abandon his own extraordinary style—certainly no *translation* of the time would warrant him to "compose a tragedy on the model of the Greek drama!"

A curious passage of Stevens shows that an authority, upon whose opinion rests a good deal of the popular fallacy that the Bard of Avon had no classical attainments (in the teeth of a thousand instances to the contrary), should be inquired into a little, and the nature and qualities of his heart as well as head be considered, before we submit to his dictum with implicit reverence and belief.

* From a translation of 'Electra' by C. Wase, in the 17th century.

"Had Shakspeare made one unsuccessful attempt in the manner of the ancients" (says Stevens), "it would certainly have been recorded by contemporary writers, among whom Ben Jonson would have been the first. *Had his darling ancients been unskilfully imitated by a rival poet, he would at least have preserved the memory of the fact, to show how unsafe it was for any one, who was not as thorough a scholar as himself, to have meddled with their sacred remains.* 'Within that circle none durst walk but he.' He has represented Inigo Jones *as being ignorant of the very names* of those ancients whose architecture he undertook to correct; in his *Poetaster* he has in several places hinted at our poet's injudicious use of words, and seems to have pointed his ridicule more than once at some of his descriptions and characters. It is true he has praised him, but it was not while that praise could have been of any service to him; and posthumous applause is always to be had on easy conditions." From all this it is natural to conclude that Jonson would have ungratefully depreciated his contemporary if he could, and that his assertion of "Shakspeare's having little Latin and less Greek" was the speech of a man who spoke slightingly of a rival in the only way his power could possibly have been assailed, and that, too, when death left him alike indifferent to praise or censure.

As it was not so much the object of the present paper to establish the classical learning of Shakspeare as to show the truth of its motto, "that faded ideas float on the memory like half-forgotten dreams," thereby causing those coincidences which are sometimes severely termed plagiarisms, we shall content ourselves with putting the resembling passages in juxta-position, avoiding critical remarks, so that the reader may not, in any degree, be swayed in his judgment.

But having already nearly exhausted the limits of this paper upon a subject that may seem at first to be somewhat at variance with its title, we will take our leave of the reader at present, by requesting him to consider the following lines of Shakspeare:—

> In the most high and palmy state of Rome
> A little ere the mightiest Julius fell,
> The graves stood tenantless, the sheeted dead
> Did squeak and gibber in the Roman streets;
> Stars shone with trains of fire, dews of blood fell;
> Disasters veil'd the sun; and the moist star
> Upon whose influence Neptune's empire stands,
> Was sick almost to Doomsday with eclipse.

Let this passage be closely compared with Virgil's on the *same subject* in the first Georgic, commencing

> —— Sol extincto miseratus Cæsare Romam
> Cum caput obscura nitidum ferrugine texit
> Impiaque æternam timuerunt secula noctem.
> &c. &c.

and the *coincidence*,* at least, must appear very extraordinary!

J. A. Wade.

* I may be permitted to say here that any deviation from the first design of a series of papers upon "Literary Coincidences" would never have taken place had I, at the time I commenced it, had the slightest knowledge of the subject of Shakspeare's learning being in the hands of higher powers, for which and their possessor I have the most unqualified respect and esteem.

ARCHITECTURAL REMAINS.

INTRODUCTION:—RICHBOROUGH CASTLE.

ALTHOUGH few countries in Europe abound so plentifully as Great Britain with the vestiges of the architectural grandeur of former ages, so little does the great majority of the inhabitants of England know of the treasures they possess, that, beyond the knowledge of the professed antiquary and the limited information acquired by the tourist, an almost complete state of universal ignorance prevails. The ruins of a castle are surveyed by the multitude with the apathy of perfect indifference, and the sight-seers are satisfied, in the inspection of a cathedral, with the meagre and rotatory intelligence of an antiquated sexton or a childish crone. To these *emeriti professores* of antiquarian literature is intrusted the instruction of the visitors to our national monuments; and whoever has, in the course of his peregrinations, entered the walls of the ancient palaces and stately mansions of our ancestors, has no doubt met with groups of querists staring agape at the impertinence and twaddle of the *custos* of the lions of the exhibition, whose unvarying pertinacity to the formula of her communications is perhaps the most extraordinary part of the things heard or seen.

It is very true, an immense deal has been collected and published on the subject of the architectural remains of Great Britain, and the valuable labours of many men of high talent, judicious discrimination, and indefatigable industry have enriched our national literature in its relation to the study of antiquity with books not to be surpassed, by anything in the same way, by our continental neighbours, and, indeed, have almost created a branch of literature unknown, and, until very recently, unsought for by the inhabitants of most of the continental states. It must, in regard to these observations, be recollected that we are speaking of the architectural antiquities of what are called the "middle ages." Everybody knows that, with respect to the antiquities of Greece and Rome, an immensity of erudition has been employed by foreign scholars, and that the published foreign works on those most interesting subjects are among the highest productions of critical investigation and acumen, and that to those labours modern art is indebted for its progress and success: but we are speaking of the antiquities of the "middle ages;" and we repeat that the information collected as illustrative of them is almost purely English; and having done this justice to our antiquaries we revert to the fact, that though their labours have been immense, their diffuseness has prevented them from being useful, and with all due respect for the great names which ornament the title-pages of the many ponderous volumes of antiquities, county histories, and similar compilations, those huge volumes abound too much in prosy disquisitions on things of minor importance, and lead their reader into labyrinths of tedious discussion, which, instead of conveying the information of which he is in search, beget a distaste for the very subject of his inquiry and compel him to abandon his pursuit in disgust and despair. We have plenty of books on the re-

mains of our national monuments, but most of them are of a size which alarms the general reader and deters him at once from opening their leaves; and we have also plenty of books descriptive of the beauties, both natural and artificial, of our country, but these again are, for the most part, but flimsy productions, and, as Lord Bacon says of translations, "flashy things,"—"Distilled books, like common distilled waters, flashy things." They are pretty books enough, a sort of literary playthings, very proper to amuse the idleness of those who like to be idle, and dainty presents for grown-up boys and girls. Now, from neither class of books of this sort will much real instruction be gathered; but fortunately there is, at this moment, the germ of a better taste in existence on this most interesting branch of information, and if that germ be properly cultivated the best results may be anticipated. The present inhabitants of these islands are evincing a desire to know something more about art generally, than their immediate predecessors of the last age evinced, and more particularly within these last few years has a taste for the antiquity of the "middle ages" developed itself, and a wish to become acquainted with the manners and customs of those iron men, both physically and morally iron men, has arisen. Now if this taste be judiciously directed, what an immense field will be opened for investigation, and what splendid gems may not be rescued from the apparent rubbish of antiquity; we say apparent, because much that to the eye of ignorance appears rubbish is of much value, and will, upon investigation, repay most profitably the labours bestowed upon it! Without being fastidious, or wishing to be severe upon certain modern architects, we will ask, is it probable that the country would have been defaced by so many wretched buildings which, under the title of "Gothic," have recently reared their heads, and some are even now in the act of rearing them, if a more general knowledge of the principles of Gothic architecture had existed? Everybody knows what immense sums have been expended of late years, and most properly expended, in the service of the established religion of the empire, and at the same time almost everybody regrets that temples of divine worship more consonant to good taste have not been erected. There are, no doubt, amongst the many new (so called) "Gothic" churches and chapels lately built several that are highly creditable to the skill and good taste of those by whom they have been designed, but there are very few even of these several that speak much for the genius of the architects. Where great beauties do exist they are servile repetitions, not imitations, in the proper sense of the word imitation, but absolute repetitions of ancient edifices, and, in most instances, of attempted originality; an incongruous absurdity has been the result, disgraceful to professional character, and painful to the eye of the beholder. The majority of the newly-erected "Gothic" churches are a disgrace to national taste; they are referable to that class of building which has very properly been termed "carpenters' Gothic," in which the builder, if he make his arch pointed and so contrive his windows that they neither admit light nor air, but present an awkward and attenuated appearance, considers he has completed his work to "order," and reared

a tenement of brick and plaster superior to the Lady Chapel itself, or the diminished dignity of King's College, Cambridge. A better state of things is about to arise. The public taste has, within a very short space of time, improved *per saltem*; it only requires proper guides to direct its energies, and fortunately such guides do exist amongst us. Several recent publications on the subject of architecture, and illustrative of the edifices of the former natives and inhabitants of England, are a credit to the advancement of art, and a directory to those who are anxious for its still further progress. The works of Mr Britton, Mr Nash, and some others, have done much already to open the eyes of the public, and to foster those incipient efforts which are being made to get rid of the prejudices and ignorances and blunders with which knowledge has been crippled and good taste paralysed. But much, very much indeed, still remains to be done; a mere antiquary, as Johnson has remarked, is but a rugged animal, and something beyond the mere abstract knowledge of the antiquities of the middle ages is now required from a scholar and a gentleman. It is to assist this further thirst of knowledge in a most pleasing branch of learning that these notices are undertaken; and it is in hopes of being ancillary to greater undertakings that this small tribute to the departed grandeur of our great ancestors is put forth. We have, however, another object in view. We shall endeavour so to treat this subject as to make it an illustration of the modes of life, the habits of action, and perhaps of thinking of the buried dead before they "shuffled off this mortal coil," and in this way to make it throw such a light upon the history of this country as to elucidate and explain many facts which, as yet, appear obscure and unintelligible. In the course of our labours we shall consult the more voluminous labours of our predecessors, and make such use of them as may appear convenient, introducing our own original matter, and striving to produce such a disquisition as may be beneficial and pleasing to the general reader.

The fortifications ascribed to the aboriginal inhabitants of Britain, and occasionally mentioned by Cæsar and Tacitus, were little better than mounds of earth, trenches, and barriers formed of trees and stakes. They are generally to be met with on the tops of hills, or in elevated situations. We do not mean to enter much into a description of these *castra*, as they may be termed; but it may be as well to mention the most remarkable of them. These are the *Herefordshire Beacon*, on the Malvern Hills, in Worcestershire; the *Caer Caradock*, near Church Stretton, in Shropshire; *Moel Arthur*, in Flintshire; *Chun Castle*, in Cornwall; and *Maiden Castle*, in Dorsetshire. The Romans, having reduced the country to subjection, introduced their own style of fortification; they made those celebrated roads, which still remain in several parts of England, and which have never been surpassed in durability by the most successful road-makers of modern days. They fortified the chief towns with walls of strong masonry, with towers and gates. They established the stations of *Londinum*, London; *Camalodunum*, Colchester; *Verulamium*, St Alban's; *Aqua Solis*, Bath; *Eboracum*, York; *Glevum*, Gloucester; *Venta Belgu*, Winchester; *Rutupium*, Rich-

borough; of which the most perfect vestiges remain, and which we are about to describe, as being the most important of the whole, and many other celebrated *castra*. Of Anglo-Saxon fortresses there is little remaining: it is most probable that, on the retreat of the Romans from the island, the Anglo-Saxon inhabitants took possession of the fortresses already erected, and enlarged, altered, or reduced their extent, as it suited their own taste and convenience, and this will account for certain incongruities in the remains of those edifices, and explain the variation of the styles of architecture they now exhibit. The want of fortresses at the time of the Norman invasion has been adduced as the cause of the easy conquest of the country by William the Conqueror, and as probably one of the causes of its being so completely subdued and in so short a time. No sooner, however, was the Conqueror established on the throne of England than the whole face of the country was changed. We are told by Matthew Paris's History, p. 8, col. 11, that he "excelled all his predecessors in building castles, and greatly harassed his subjects and vassals by these works." This example appears to have been imitated by all the great barons, and also by the prelates. Domesday book makes mention of forty-nine castles in this reign, although, in the time of Edward the Confessor, the only castle mentioned in that extraordinary document is Arundel Castle. According to Domesday book, the Conqueror built eight castles: ten were raised by the Great Barons; one by an under-tenant to Earl Roger, and eleven by other persons. All these are distinguished by a lofty mound and keep, and will be fully described hereafter. This style of building, as may be seen in the 'Reports from the Commissioners respecting the Public Records,' fol. 1819, p. 439, "marks the peculiar architecture introduced into our castellated fortifications by the Normans at their first settlement." We are told by Knighton, that William Rufus was a great builder of castles, and indeed the state of the country required strongholds for the security of life and property. The reign of Stephen was most remarkable for the number of castles erected in it. From the chronicles of that age it appears, that in the space of nineteen years 1,115 castles were erected, and it is calculated that at that time 1,500 fortified edifices existed in England. We shall resume this part of our subject in our future numbers, and shall now proceed at once to describe the most ancient, and perhaps the most interesting of all the vestiges of antiquity in this country.

There is every reason to believe, from the concurrent testimony of medals and of coins dug up, and of fragments of history, that Richborough castle was first formed in the reign of the Emperor Claudius, near the spot where the Romans most usually landed.

We learn from Suetonius, in his life of Vespasian, chap. 4th, that that illustrious person was in command at this station in the time of Claudius Cæsar, and it was here that the celebrated commander Agricola arrived in the reign of the tyrant Domitian. *Vide* Tacitus in vita Agricolæ.

The situation of this castle, or, to use the Roman term, "*castrum*," was admirably chosen for the purposes for which it was designed.

It commanded in the most complete manner one of the mouths of that great estuary on the Kentish coast, which, from natural but slow causes, has since ceased to exist; Reculver being supposed to have commanded the other entrance. In the space between, the Roman fleet once rode at anchor; that space, however, is dry land, covered with smiling fields and pleasing villages, and the little rivulet, the Sar, or Stour, is the sole water that washes the basis on which this once formidable fortress was erected. In Boys's 'History of Sandwich,' a very valuable and elaborate work, it is said, that on digging some years ago at the foot of Richborough Hill, the workmen, after removing what was clearly the accretion of the muddy banks of the Sar, as that river diminished more and more during many ages, came at last to a regular sandy sea-shore with broken shells, on which was found a small shoe, or sandal, with a metal fibula.

The importance of this port, for it was in fact the key to the Roman power in England, will account for its having been, from the very first beginning of the Roman invasion, so much attended to. Its walls were probably commenced about the year 43. The present structure, however, appears to have been in part built, or at least enlarged and completed, by the Emperor Severus, about the year 205.

The castle stands on the extreme point of a hill of moderate elevation on the eastward, close to a steep precipice overhanging the river Sar. It is certain that where the Sar now runs the sea once flowed, and that here was the haven; and there is, moreover, every reason to think that the spot on which the castle is situated was originally an island, for a narrow slip of marsh nearly adjoining, between the elevated ground on which the edifice is erected and Gursom, is frequently overflowed in wet seasons. Indeed, the land all around the high ground immediately occupied by the castle and its precincts is a perfect flat, intersected with ditches, and in the summer time used as a place of pasturage for oxen.

There are in this distinguished station still plainly to be traced all the principal parts of one of the most perfect of the stationary camps of the Romans.

The upper division, for the general and chief officers, and the lower division, for the legions; and in the former the Prætorium, with its parade, containing the *Augurale*, or place for sacrifices and for the augurs to consult the entrails of the victims; for, strange as it may seem to us moderns, the Roman masters of the world, a people whose stupendous works evinced their high advance in the march of mind, were yet the slaves of the most grovelling and revolting superstitions, and sought in the entrails of bulls and goats that information as to future events which might have been much better prognosticated from the experience of the past. There are also vestiges of the *sacellum*, or sacristy, for depositing the chief ensigns, and especially the "eagles," which it is well known were made objects of superstitious worship of the Romans, and thence called in the Evangelists the "Abomination of Desolation."

In the walls of the *Castrum* are the traces of the four great gates.

The *Decuman* gate, or largest gate of all, so called from its width, admitting ten men abreast.

The Postern gate, or first *principal* gate, so called because it was near the quarters by the principal officers. It was narrow, and so constructed as to be easily defended.

The *Prætorian* gate, which in this instance was also the *Water gate* of the castle.

And, fourthly, on the side nearly opposite to the Postern, another gate, which was the second *principal gate*.

Adjoining to the same walls, also, on the outside, may be traced foundations of towers clearly Roman; but which, as appears from some part of their construction, must have been added after the walls of the *Castrum* were built; a circumstance which shows more strongly the very high antiquity of the original structure.

The Castrum appears to have been as nearly of a square form as the nature of the ground will admit enclosing an area of several acres.

On approaching the ruins the eye is struck with the magnificent appearance of the north-eastern wall, commonly called the North Wall, which is on the outside in some parts near 30 feet high from the ground, and in many others about 23, and is 560 feet in length, and at least 5 feet in depth, or breadth, from the lower row of bricks down to the foundation. Its thickness at bottom is in general from 11 to 12 feet; but it is in some parts 13 feet thick; a manifest proof that they did not in those days build by so regular and exact a rule as has been the custom since.

The wall is constructed of regular facings of alternate rows of square stone and brick on the outside surfaces; but within, between these two uprights, it is composed merely of chalk, rubble, and flints, flung in carelessly, with cement or mortar spread over them at proper distances, so as to sink into the whole mass. In this respect it resembles the wall of Severus, in the north of England, which in many places is not above eight feet thick, and consists of two regular facings of stone, the internal space being filled with loose slaty rubbish and mortar.

According to Mr Boys, the foundation was laid thus; first two rows of bolder stones on the natural soil, which is a solid pit-sand; then a thin stratum of chalk nodules; next a single row of bolders, and over them another thin layer of small chalk, all these being without cement; then bolders again, mixed with mortar; and so the masonry proceeds internally, with a confused mixture of large bolders, ochre stones, sand stone and blocks of chalk, with fossil *pholades* bedded therein, and also *balani* on their surfaces, the whole cemented with mortar formed of lime, grit, large and small pebbles, sea shells, and fragments of baked bricks, a composition much too coarse and rude ever to have been very fluid.

The outside of this great north wall is very beautiful to the eye, as well as magnificent. It is composed, in general, of seven great and fair distinct rows of stone, each of them generally four feet thick, and each of them consisting in general of seven courses of separate stones.

The measure of the great combined courses varies a little, some being four feet three inches, whilst others are only three feet three inches in breadth, or rather in depth. These great courses of stone are separated from each other by six smaller courses of bricks composed of a double row, about an inch and a half in thickness, eight inches to a foot in length, and fourteen to sixteen inches long. These bricks are some of them entirely red throughout their whole substance; some are red on the outside, but of a deep blue within, and some are of a yellow colour. The structure is uniformly of this style, except where reparations have been made in Saxon times, and with squared stones of a much smaller size, and with herring-bone work.

The entrance through the magnificent north wall at Richborough, into the great *Castrum*, is through a side gate called, in the time of the Romans, one of the principal gates, because nearest the quarters of the principal officers, and in subsequent times the postern gate: in consequence of its peculiar construction, it can hardly be distinguished from the rest of the wall on the outside. The passage entrance is about three feet ten inches wide; but on turning, its width increases to seven feet eight inches, and so continues to the inside of the walls.

On passing through this entrance, the whole internal area of the camp is seen at one view; it is now a corn field, and whilst the corn is growing it is very easy, from the different colours of the blade, to distinguish the foundations of many of the original interior divisions, of which nothing now remains above the surface of the ground. The whole stone work of the prætorium was open to the eye some years ago, when it was searched and measured by Mr Boys, of Sandwich, with great accuracy.

In the north-west wall is the space where once was the *Decuman* gate. This fact was established by the industry of the same antiquary. This gate was originally five feet and a half in depth, twenty-five feet in length, passing through both sides of the wall, and twenty-one feet in breadth, affording space for ten men to march abreast.

Standing just within the postern or principal gate, and looking from the north-west wall, the view is over a steep precipice, upon marshes which were once covered by the sea; along the edge of this precipice most probably another wall once extended. The *Castrum*, however, in its present state, is open on this side.

Foundations of the *Augurale* and *Sacellum* have been discovered by digging, and the tusks of boars and bones of other animals sacrificed to the gods have been dug up. But the most curious vestige of Roman antiquity dug up, in this place, was a small bronze figure of a Roman soldier playing upon a pair of bag-pipes. It shows that the bag-pipes were a Roman war instrument, and that their origin was not derived from Scotland. This figure, which was very perfect, is supposed to have formed a portion of the *ephippia*, or horse-trappings, of a Roman knight, and to have been suspended before the breast of the horse; it was found by Mr Boys, and afterwards came into the possession of Mr King, the antiquary. The

writer of this notice has repeatedly explored this most interesting ruin. The venerable walls are now on their upper surfaces covered with moss, and afford spacious seats for the contemplations of the philosopher, the historian, and the antiquary. It is here that the spectator will be struck, whilst surveying the desolation around him, with the grandeur and the insignificance of the power of the greatest nation of antiquity; and it is here that the words of Lord Bolingbroke will be forcibly remembered, "History is philosophy teaching by examples."

J. R.

MOZART AND HAYDN.

A CURIOUS publication which has just appeared on the continent, entitled, 'Anecdotes of the Court of the Emperor Joseph II,' contains the following dialogue between that sovereign and Karl Dittersdorff, the celebrated musical writer and composer. We feel assured that our musical readers will be interested in becoming acquainted with the opinions pronounced on Mozart and Haydn by two such eminent musical connoisseurs.

Karl Dittersdorff visited Vienna in 1789, for the purpose of making arrangements for the performance of his oratorio of 'Job.' He wished likewise to have his symphonies on Ovid's Metamorphoses performed at the imperial gardens. For this it was requisite to obtain the Emperor's permission, to solicit which Dittersdorff was honoured with an interview with Joseph II. He had been informed that the Emperor was in the habit of making very minute inquiries on any subject which excited his interest; and that when, in the course of a conversation, he made those inquiries, he liked to receive a decided answer, given without timidity or hesitation; and that any expressions indicating humility or flattery were sure to displease him.

The Emperor received Dittersdorff in his private cabinet, and after a little conversation on the oratorio of 'Job,' on which the Emperor made some observations highly complimentary to the composer, the following dialogue ensued. It is here given as related by Dittersdorff himself.

The Emperor: "Are you still employed by the government in Silesia?"—*Dittersdorff:* "Yes, your Majesty."—*The Emperor:* "In what capacity?"—*Dittersdorff:* "In the departments of finance and jurisprudence."—*The Emperor* (in an emphatic manner): "And do you possess the requisite information on those subjects?"—*Dittersdorff:* "As I have held my appointment for the space of thirteen years, I may fairly presume that I am deemed competent to discharge its duties."—*The Emperor:* "How have you made yourself master of so many various attainments?"—*Dittersdorff:* "Having been born and educated in Vienna, it would

have been a disgrace to me had I learned only to play the violin and to compose music."—*The Emperor:* "Have you heard Mozart?" —*Dittersdorff:* "Three times, your Majesty."—*The Emperor:* "What do you think of his playing?"—*Dittersdorff:* "My opinion concurs with that of all musical connoisseurs who have heard him." —*The Emperor:* "Have you heard Clementi?"—*Dittersdorff:* "Yes, Sire."—*The Emperor:* "There are some persons who prefer Clementi to Mozart. What is your opinion on that question? Tell it me frankly."—*Dittersdorff:* "Clementi's playing is characterized by a vast degree of skill and science. With those qualities Mozart combines the inspiration of an exquisitely fine taste and fancy."—*The Emperor:* "That is my opinion, and I am much gratified to find that it agrees with yours. What do you think of Mozart's compositions?"—*Dittersdorff:* "They appear to me to be the creations of a bold and original genius. I know of no composer who is gifted with so rich a fund of new ideas. I should wish him to use them more sparingly. He never affords his listeners time to breathe. When the ear is disposed to dwell on a beautiful idea, another rises up and puts it to flight. Thus the mass of hearers—the unscientific (but those, after all, to whom music ought to be addressed, as well as to the more educated and learned)—are unable to catch and follow the multiplicity of beauties which Mozart so lavishly diffuses through his compositions."—*The Emperor:* "You are right. In his operas he frequently introduces such a crowd of notes in the accompaniments that the singers complain."—*Dittersdorff:* "That is not a fault, so long as a composer has the skill to keep the orchestral parts subordinate to the vocal."—*The Emperor:* "As you have done, Dittersdorff, in your new work. By the bye, what do you think of the compositions of Haydn."—*Dittersdorff:* "I have not heard any of his operas."—*The Emperor:* "You have lost nothing by that. But what do you think of his instrumental compositions, his canzonets, &c.?"—*Dittersdorff:* "That they deserve the admiration they universally excite. Haydn does not enjoy an evanescent glory, like those insects whose existence lasts only from morning to night. He understands the art of embellishing so exquisitely even a trivial idea, that it presents an air of novelty to the most experienced ear."—*The Emperor:* "Does he not sometimes indulge in eccentricity?"—*Dittersdorff:* "Yes; but without overstepping the boundaries of genuine art."—*The Emperor:* "Right. . . . I some time ago amused myself in comparing Haydn and Mozart. . . . I should like to hear you draw a similar comparison, so that I may know how far your notions and mine correspond."—*Dittersdorff:* "Your Majesty imposes upon me a very difficult task, and before I attempt to execute it, I must request permission to address a question to your Majesty."—*The Emperor:* "The permission is granted." —*Dittersdorff:* "What comparison would your Majesty be inclined to draw between the works of Klopstock and Gellert?"—*The Emperor* (after a short pause): "Hem! . . . Both are great poets. One must read the writings of Klopstock several times over before we can discern all their beauties. On the contrary, the beauties of Gellert are apparent at first glance."—*Dittersdorff:* "Your Majesty

has now answered the question which you put to me."—*The Emperor:* "Then, I presume, you would compare Mozart to Klopstock, and Haydn to Gellert?" *Dittersdorff:* "That, I think, would be a fair comparison."—*The Emperor:* "I cannot dispute it."—*Dittersdorff:* "May I request to know the similitude which your Majesty has established between the two great composers?"—*The Emperor:* "You shall hear. I compare the compositions of Mozart to a gold snuff-box made in Paris, and those of Haydn to one of London make. Both are beautiful. The former excels in tasteful ornament; but the latter is distinguished for its chaste simplicity and fine polish. Thus you see our opinions very closely approximate. . . . I am very glad to have made acquaintance with you, and am happy to find you a different man from what you have been described to me."—*Dittersdorff:* "How, your Majesty?"—*The Emperor:* "I was given to understand that you were egotistical and vain, and that you were unwilling to award praise to other composers. I rejoice at having discovered the contrary, and I shall be happy to have the pleasure of conversing with you frequently. You will always find me ready to receive you at the hour at which you were admitted to-day."

A VISIT TO KHOSREW PACHA.

We feel assured that our readers will be gratified by some account of the Sultan's Prime Minister; a personage who, at present, excites general interest throughout Europe. The following description of a visit to him is from the pen of a general officer in the service of the Emperor of Russia:—

"Two days after I had been presented to the Sultan, I received an invitation to dine with the Seraskier Khosrew. The aid-de-camp who brought me the message informed me that it was intended I should dine tête-à-tête with the Seraskier, and that the hour appointed for dinner was seven o'clock. Shortly after six I embarked with my dragomann in a kaik for Constantinople. On landing at the port I mounted a horse, and rode to the old seraglio, which is the present residence of the Seraskier. As soon as I had approached the steps of the palace, four or five Turkish attendants who were there in waiting, came to hold my stirrup, and assist me in dismounting. I ascended the grand staircase, and entered the ante-chamber, in which there were several Turkish military officers. On my entrance they rose, and one of them directed me towards a door, which was thrown open for me by a negro slave. The apartment with which this door communicated, and which I now entered, was a long narrow room, having a carpet spread over one part of it. In one corner was a divan. This is the apartment in which the Seraskier gives his morning audiences. Several old men were sitting cross-legged on the carpet, engaged in writing. After I had stopped here for a few moments, an attendant came to me and requested me to advance. He ushered me into a third apartment, much smaller than the others. Here two negroes drew aside a damask curtain, serving as a door to another chamber, in

which I perceived the Seraskier. He was standing with his arms resting on a high table, covered with papers, one of which he held in his hand. As soon as I entered he advanced towards me, and requested me to be seated. We both took our places on a divan, in a sort of recess. On taking a survey of this apartment, I perceived that it was furnished in a sort of semi-European taste. Two sofas, and several arm-chairs, two mirrors, and the tapestry on the walls, were evidently importations from Europe; whilst the baskets of flowers in the niches, the vases emitting the perfume of burnt aloes, the mats which covered the floor, and a small fountain pouring its limpid stream into a marble basin, were of Asiatic creation.

"As soon as we had seated ourselves on the divan, pipes were brought to us. The servants having withdrawn, an interpreter entered, and took his place between me and the Pacha. After a few moments' silence, Khosrew observed that he had seen me at Kiat-Khané, when I was visiting the Sultan, and that at the first glance he had conceived a regard for me. I replied that I felt infinitely flattered by the kind notice of a personage so illustrious as the Seraskier, and that I would endeavour to render myself worthy of it. A short pause intervened, and he then inquired whether I was intrusted with any commission from my sovereign; adding that, if I were, I might rely on any assistance which it was in his power to render me. I replied that I had retired from the army, having served in it for forty years; that I had no commission from my government, and was travelling merely for my pleasure; that I had visited Constantinople for the purpose of seeing the reforming monarch of the East, who was on a footing of such peculiarly friendly relations with the Emperor, my master. After this short dialogue, the servants entered to remove the pipes and serve coffee. Whilst we were taking the coffee the Seraskier asked me whether I intended to remain long in Constantinople, and he offered to send me a *Kavas*.* I thanked him, and replied that I proposed remaining in Constantinople only three days, after which time I should proceed to Nicomedia and Brussa. '*Peki*' (very well), said the Seraskier; 'Achmet Pacha intends setting off at the same time, and for the same place, and I will recommend you to him. He will show you every attention when you reach those countries.'

"Khosrew now clapped his hands by way of signal, and the servants and interpreter immediately left the apartment. Other servants then entered, bearing jugs and basins of silver; one of them threw across my shoulder a towel of fine muslin, embroidered round the edge with gold; He brought the basin and jug, and poured out some rose-water; I washed my hands, the Seraskier also washed his, but he performed the operation much more slowly than I did. When the servants retired, others entered, and placed between the Seraskier and me a small table; and then a negro entered, bearing on his head a large tray, on which were placed about ten small plates, containing different kinds of refreshments. A tortoise-shell spoon was handed to me.

"Having been long since accustomed to the oriental mode of eating, I experienced but little embarrassment in using my fingers to help myself to the contents of the different plates. When I had taken what I wished, the Seraskier helped himself in the same manner. We were not very long in dispatching the first course; and on its being removed, the

* A police agent who protects foreigners. Formerly this duty was performed by the Janissaries.

second was immediately brought in. The Pacha took a piece of *pilaw* in the palm of his hand and offered it to me. Though this mode of being helped by my Amphytrion was not quite to my taste, yet I accepted the piece of *pilaw*, because I knew the offer of it was a mark of the most gracious attention. I cannot enumerate all the various delicacies of our dinner, which consisted of about a hundred different dishes. As to me, I partook only of a roasted quail, some bits of *kebaba*, and some little cakes stuck with comfits. When our silent repast was ended, rose-water was again brought to wash our hands; after which, the perfume of aloes was sprinkled about the apartment, and we were again left alone. As we had no interpreter, I was forced to remain silent: the Pacha, too, said nothing; but he gazed at me very earnestly—his keen eye seemed to scan me through and through. In a few moments there commenced a scene which I shall never forget as long as I live. The Seraskier gave a signal, and immediately a negro entered, carrying in his left hand a silver pail filled with ice, in the midst of which was buried a bottle, whose form revealed the presence of champagne. The negro placed before us two goblets, each of which seemed to be capable of containing six of the usual sized glasses of champagne. The negro poured out the wine, filling the goblets to the very brims, for it foamed but little. The Seraskier took his goblet, and nodding his head, said to me in Russian—*kavatim*, (a Russian word in use among the common people, and signifying—*let us take a draught*). I thought I should have burst into a fit of laughter, which, however, I luckily succeeded in restraining, and I gravely repeated *kavatim*. The Pacha smiled, and actually quaffed off at one draught the contents of the enormous goblet. I followed his example, and handed the empty goblet to the negro—'*Peki, Peki!*' (well, well) said the Pacha, and he immediately ordered the negro to fill up another bumper.

"Not being in the habit of drinking so much wine, I was afraid of its effects; but still I thought it would be very odd if I could not drink as much as an old Turk of eighty. I determined not to give in; and resolutely drank off the second goblet. '*Peki! peki!*' exclaimed the Pacha, and in a few seconds he began to doze. The negro left the room, and returned with a second bottle. The champagne was excellent; it was of that peculiar kind called *cremant rosé*. Feeling no ill effects from what I had already taken, I thought I would in my turn challenge the Seraskier. I beckoned to the negro to fill up the goblets.

"Khosrew, who was still slumbering, opened his eyes. '*Kavatim*,' said I. He laughed, said '*peki*,' and tossed off the third bumper. He soon fell asleep in good earnest. The negro left the room. I waited for some time, and at length thinking it a pity to disturb his slumbers, I rose softly, with the intention of retiring. My movement, however, roused him, and he beckoned me to stay. He clapped his hand, and ordered the interpreter to appear. The Seraskier directed him to say that he wished me to rest that night in the palace; it was late, the streets were dark, and it was not seemly that a stranger should at that hour of the night leave the palace.

"A little chamber was prepared for me. It contained a divan, spread with soft cushions, and covered with a lion's skin. At the head was placed a morocco pillow. A slave drew off my boots, and took my coat; and when I lay down, I found myself beneath a veil of fine gauze, which

was spread over my couch to keep off the flies. I slept quite comfortably and soundly. Next morning I arose at an early hour. The same slave who had attended me the night before, assisted at my toilet, and served me with coffee.

"The interpreter next made his appearance, and asked me on the part of the Seraskier how I was, and how I had slept. I told him that I wished to express my thanks personally to the Pacha; but he informed me that Khosrew had been for some time at the divan, where he received petitions and gave audiences. He had ordered the interpreter to tell me not to disturb myself, that his shalloop and rowers were in readiness, and awaiting my commands. This interpreter expressed himself with facility and correctness in French, but his accent led me to suppose that he was a Greek or rather an Italian. I gave a douceur of ten piasters to the slave who had waited on me; and having taken leave of the interpreter, I left the palace. I was conducted through a long passage, and down a flight of steps, which led to a street, but not the same one from which I had entered on the previous day. Two Turkish attendants were waiting for me; the one placed himself beside me, and the other walked before us; the latter carrying a large stick in his hand. In this manner we proceeded through several narrow streets, and all the people we met on our way respectfully withdrew to one side while we passed. At length, after crossing the Balouk Bazaar, we arrived at the port where the Seraskier's shalloop was waiting. The pilot took me by the arm, and placed me in the seat allotted to me. I gave my two guides ten piasters, and dismissed them.

"As soon as we had quitted the port, a man who was stationed at the prow of the shalloop called out some words which caused all the boatmen to row off to one side, as if fearful of impeding our course. I perceived also that the boats stationed in the opposite port pushed off when we appeared in sight.

"On landing, I presented twenty-five piasters to the rowers. A richly caparisoned horse, together with two of the Seraskier's slaves, were waiting to conduct me home."

ARTISTS AND CRITICS.

TO THE EDITOR OF THE POLYTECHNIC JOURNAL.

Sir,—I have read with an equal mixture of surprise and regret the article in your last number entitled 'Reviewers Reviewed.' From the extraordinary and unbecoming style of language in which it is written, no less than from its extravagant praise and censure, and the strong personal feelings and interests grossly manifested throughout, I can scarcely suppose that you intend the Polytechnic Journal, which is rapidly taking its place as an authority in matters of art, should be identified with an article so conspicuous for objectionable qualities.* Under this impression I will, at all events, offer

* We certainly do *not* identify ourselves with the article in question, as our unhesitating insertion of the above may sufficiently show. But as there were many

you a few strictures, risking the chance of your giving them insertion. I must trust, however, to your candour for believing that I have a due admiration, together with a deep feeling for modern art, its real interests and progress; and also to your judgment for not doubting my sincerity on account of a tranquillity of examination which must appear so very tame when compared with the metropolitan eloquence of your more gifted correspondent.

I shall pass over the vigorous incoherence of the first and second pages, with its heterogeneous mass of names of painters and noblemen, and bewitched colours; all apparently collected together, as this Reviewer of Reviewers characteristically expresses himself, in "a pop-gun of ten feet bore, charged with prismatics, well wadded down by the author, and discharged by him *full smash* into every painter's face," (and every reader's also, in his particular instance,) "entering his *eyes and gullet to seize the heart*, and thence work its way to the mind." A better method may be found for this purpose. The first point, therefore, to which I shall request you, Mr Editor, and your readers, to lend a dispassionate attention, occurs towards the bottom of this Reviewer's third page (p. 193), where he refers to the laws instituted by the Royal Academy, limiting all its members, in common with every one else, to the number of eight works for each exhibition, and limiting also the number of works which any artist, whether a member or not, may exhibit in one room. After making this amusing statement, he all at once, and for the first time, becomes serious. "These two laws," says he, "acting together, *seem to us* to be calculated to diffuse equality of rights as far as it is possible to go."

Now as most people know that a member of the Royal Academy possesses the right of exhibiting eight pictures in each exhibition, whenever he chooses to send as many, while the Council, on the other hand, possess and exercise the right of rejecting any (sometimes *all*) of the pictures of those who have no diploma, I can only say that the two laws in question "seem to me" to be calculated to give the appearance of equality of rights, while in reality nothing of the kind exists. I am not contending, be it observed, that the members of the Royal Academy should possess no privileges, but that it should not be pretended that they have none while the fact is so very evident. But immediately after his statement as to equality of rights, this Reviewer displays the real truth in an exemplary manner, insisting on the justice of privileges, and requesting "to ask *en passant*" whether it would not be absurd to suppose that the members should devote their time and labour "for more than three weeks" in each year, "and derive no advantage!" We thus discover that in the use of the term "equality of rights," we are to consider "exclusive privileges" are implied, as a matter of course. This gentleman occasionally says more than he intends.*

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things advanced by the writer in the 'British and Foreign Review' with which we disagreed, we thought it right to admit the paper on 'Reviewers Reviewed,' the signature to which was improperly omitted. It was written by an influential member of the Royal Academy. In the same spirit of fairness we have admitted the present rejoinder.—Ed.

* During the last month we have received the following letter. We must leave our

It may be salutary and quite sufficient to allude, once for all, to the strange heap of vituperative epithets, and long compounds of London dialectics, in which this "spirited" Reviewer of Reviewers thinks fit to indulge. Steam—asses—staggering, dash off—full

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readers totheir own conclusions as to the arguments of the writer, who announces himself as a Royal Academician. We shall merely say that the letter is one of the richest things in its way we have seen for some time.—Ed.

Mr Editor,—I have been surprised, and almost disgusted, at the attacks which are constantly being made on the Royal Academy by those disappointed artists who have not the good fortune to belong to our body. It has been the case ever since I commenced the profession that aspirants for the distinction of "R.A." were loud in their disapprobation of the proceedings and plan of our excellent institution until they were admitted as members, when their better acquaintance with its tactics always caused them to swerve round in its defence. Far be it from me to deny that there are artists of the highest talent who are not members of the Royal Academy; but I humbly submit that they have no right to asperse our motives or question our privileges *until* they have been elected. We have had too much *trouble*, Mr Editor, in getting elected, to think of parting with our power at the beck of every complainant If these persons dislike our institution, let them, in the name of common sense, send their works elsewhere. They send them to the Academy for their own advantage, not ours; and, if we gain by it, we have surely "a right to do what we like with our own," as one of our worthy patrons says? It is quite true that we receive from six to ten thousand pounds a year by exhibiting other persons' works with our own; but does it therefore follow that we should not appropriate that income to our own private uses, though we have the credit of being a *national* institution? It seems to me, sir, that these dissatisfied artists will never be quiet until they possess our posts, when they will as assuredly change their tune as I did. Have we not a right to turn out what pictures we think fit, even good ones, provided we send a dignified excuse? Have we not a right to prevent our exhibitors from varnishing and cleaning their pictures as we do: else, why should we have taken the trouble, and submitted to all the humiliations, to become what we are? Have we not a right to assume our superiority over our brother artists, since we have earned our distinction? Let them earn it too! as our worthy president *now* (see Report of the House of Commons committee on "Arts and Manufactures,") says in his later, and of course wiser days; and if the British public are so ignorant of art as to be led away by a name, is it criminal in *us* to profit by it? I am sure, Mr Editor, you will see the propriety of these remarks, and agree with me that our stronghold ought not to be molested. The nation has a perfect right to vote us a gallery free of expense, and it has no right at all to inquire what we do with our money, or to interfere with the honours which we confer on our brother artists who may behave properly and submissively to us, or with the obligation which we consider her Majesty to be under to confirm and ratify our choice by her sign manual. We are the best judges, and as we have been permitted to obtain power, we will not be easily induced to relinquish it, I assure you, sir. And with fifty thousand pounds in the funds, and the clever men that are sprinkled among us, it will go hard with us, if we do not stifle the clamour that is being raised against us. Power, sir, is power; and let them rail as they like, we are sure to conquer in the long run, depend upon it.

It has been sarcastically said, that we spend our money in giving dinners to the patrons of art, instead of in sending artists to pursue their studies in Italy. As to the dinners, I answer, that the nobility and gentry we collect together, patronize and do honour to the arts through us; and as to our not sending artists to Italy, I ask, of what use would it be if we were to send them, since, according to our opponents, "all great painters are produced without academical aid." We are also reviled, Mr Editor, for electing our own friends before other artists of more talent. My excuse is this:—"Friends *stick* together." We know our pupils and those whom we have fostered: we do not always know our talented candidates; that is, whether their academical politics are sound or not. Recollect the bundle of sticks, sir! Straight, smooth sticks tie best together: twisted, gnarled, and knotty ones, however tough and durable in themselves, have not pliability enough to be fittingly located. Give me a *stick of smooth elastic pine* in preference to your *crooked, angular, and indomitable oak stick.*

I am, sir, your obedient servant,

ACADEMICUS.

drive—halt—roar, bellow, and bray—Royal cads—hyper-pseudo-self-dubbed judges—hubbub club—hyper-intolerable—old humbug—mere rind-of-bacon compliment—miserable shopkeeper-penny-worth-of-mustard feelings—dab of nobility—bow-wow-wow! &c. The continual use of these and similar expressions is certainly not calculated to enhance any argument; though indeed, to give them their due, it must be admitted that they are first-rate manifestations of a pugilistic intellect. The reader will, however, be very apt to doubt whether the best interests of the Fine Arts are at all advanced by exhibitions of this kind.

The first attempt at criticism made by the Critic of Critics, is a pretty good specimen of his powers. He commences this part of his labours at page 194. "God help us!" he exclaims, and with much need—"God help us, and poor Sir Joshua Reynolds, for we are all in a devil of a mess!" Let every man speak for himself: but to proceed. "Zounds! we feel as if fire was running through us, at the sight of the hotch-potch stuff uttered as a sort of praise by the critic on one of the wonders of the world in art, his 'Infant Hercules.'" Now, as he immediately quotes the passage in question which has produced so prodigious an effect upon his feelings; as I perceive it to be the simple statement of an opinion—whether sound or fallacious,—and as I find nothing further said on the subject by the writer in 'The British and Foreign Review,' we can only conclude that both the expression of the "hotch-potch stuff," no less than the experience of the fiery torment, must really be the result of some peculiar temperament and idiosyncrasy in the Critic of Critics, not properly referable to external influences.

After such a "demonstration" of excessive feeling at the mere expression of an opinion that the 'Infant Hercules' of Reynolds was, perhaps, the best of his attempts at poetical or historical composition (though one would have fancied that the deficiency of Sir Joshua in original power and high imaginative invention, were by this time universally admitted), it is quite natural to expect that this Reviewer should give us his own idea of the picture, or the result of his own impressions of its peculiar excellence. He first tells us that "it is *the most* imposing work in the world" (after examining all the works in the world, we presume, besides Rembrandt's) "for splendour of effect in *chiar' oscuro*, united to energy of colour, both in tint and body." So much for his tolerably presumptuous assertion as to colour. He next announces that this is not the highest excellence of the picture, but that "the superlative part," which probably renders the critic in 'The British and Foreign Review' unable to write "a critique upon this wonder of art," is the figure of the infant. Here, then, we have the Reviewer, beyond retreat. We shall thus discover in what his idea of the highest excellence of art consists, and what he has to say on a work which embodies and illustrates that highest excellence. Amidst declamatory ejaculations of no less vapid than equivocal admiration—"*such* a style of painting and colouring"—"*such* an expression of indignation and power—*such* a mighty grasp"—would it be believed that the utmost he can say in praise of this "triumph of art" resolves itself into the pictorial

illustration of mere physical strength and physical fear! "To see *such* a triumph of art" he vows he would go 5,000 miles barefoot, and walk a mile a day through nettles for the whole distance!" Are we expected to believe this? Are we to think the writer in his senses, Mr Editor; or are we to believe that all this is "merely his way of talking?"

I must here notice that the incessant use of the word "such" occasions an equivocal mode of expression, which may be very serviceable to loose reasoners in order to aid their retreat from a position; as though a man should say "by '*such* a triumph of art' I meant the finest thing in the whole world"—or (in case of wishing to retreat) "I only meant the finest thing in that peculiar way." He thus gains the subsequent choice of having meant the highest excellence possible, or a secondary kind of excellence, just as he may find most convenient to the condition of his argument. As, however, I believe he really means, by this exclamatory form of expression, to announce his opinion of the highest excellence, I shall leave it to you, Mr Editor, and your readers, to determine whether or not I translate his "English" fairly. In a hectic and feverish style, where every sentence is intended to display a climax, the selection becomes unimportant. One will be sufficient on each point. Still raving about 'The Infant Hercules' he confronts the offending reviewer with,—"Did you, or did any living creature, ever see so sublime a conception as that giant child put on canvass?"

With awe-stricken submission, and most trembling timidity—with every wish to propitiate a writer whose pen produces so stentorian an effect—I, for one, though by no means pretending to answer for every living creature thus ferociously challenged, do yet humbly venture to think I really *have* seen in the works of Raphael, of Correggio, of Lodivico Carracci, of Rembrandt, and Murillo, not *so* sublime, but a far *more* sublime conception than the 'Infant Hercules.' I am not singular in thinking this; nor are those who think with me destitute of very good grounds, in the elements of thought and passion, for the opinion they entertain that principles very much deeper and higher in the scale of nature and art have been, and are still to be, accomplished, and of more pure and elevating influence. I would not be understood, Mr Editor, to disparage an atom of the real merits of the picture in question; but when champions have an indiscriminate habit of defying everybody and everything in the world, it becomes requisite and salutary gently to lift them down from their prancing steeds, and lay them on their backs in the grass, to cool.

It is often observable in conversation, where an argument occurs and great difference of opinion is elicited, that an individual will attempt to discomfit his opponent, and neutralize his most logical position, by declaring that he cannot understand it. Here is a pretty fair instance. "We confess," says this very competent Reviewer, "we confess our inability to comprehend this passage. 'Reynolds can never be placed in the first class, because his conceptions were very limited, and never soared beyond a middle flight but to descend rapidly into that sphere from which he had risen with so much

toil and uncertainty.' What, in the name of criticism, does this mean? *We* cannot imagine."

Now, either the foregoing assertion of non-comprehension is true, or it is not true. If not true, the motive of its use has just been explained; if true,—then, so very incompetent a mind ought never to have rushed before the public, in print. The sentence is plain English enough (whether we agree or disagree with its position), and the whole article thus vituperated, is evidently written by an educated man and a gentleman.

But something else remains to be said on the foregoing alleged inability to comprehend. The Critic-of-critics has done his best to assist the obscurity of which he complains, by garbling the extract. He places a full stop after the word "uncertainty," as though the sentence ended there, whereas the writer has only put a comma and a dash, the sentence continuing thus, in support of its proposition: "*because* his drawing was generally weak, and often incorrect, and because his power of expression was confined to individuality." It will hence be perceived that the first part of the sentence is a plainly stated proposition, the second contains the demonstrations, which latter part was omitted in order to justify the accusation.

"We have given," proceeds the Reviewer of Reviewers, "a tolerable proof that Reynolds could conceive sublimely. Tolerable!—is this all?—and only "sublimely?" This is a sad toning down, after the writer has just said, or plainly inferred, that no living creature had ever seen an equally sublime conception in the whole world of paintings! Perhaps, however, he was exhausted. But another subject again excites him. "What think we all," says he, (*we all* seems to betray an intended secret) "of his 'Portrait of Mrs Siddons, as the Tragic Muse?' We ask where is there any parallel in the world? Who ever painted such a portrait? Not even Titian."

I alluded previously to the looseness of expression and the equivocation in meaning induced by the peculiar and incessant use of the word "such." He thus, in the passage just quoted, contrives to give the effect of saying that there is no portrait in the whole world equal to the one of which he speaks—not even by Titian; while, in truth, he says no such thing, but a furious truism. There is no *parallel* to this, or any other portrait, in the world; nobody ever painted *such* a portrait, because nobody else ever painted 'Mrs Siddons as the Tragic Muse,' or any picture exactly like it—not even Titian. This is as obvious as it is nonsensical. If, however, he prefer to retreat upon the ground of his apparent meaning, that *no painter* ever painted a portrait equal to Sir Joshua's 'Portrait of Mrs Siddons as the Tragic Muse,' why, let him have the full credit due to so unqualified an assertion. He presently admits, however, that Correggio, "of all the painters, was the man whose colour, impasto, and effect would have approached it the most" (the *nearest* he means) "but his peculiar mind would have caused abortion in original conception." How much is said in these few words! Three points are worthy of notice; first, we are informed that Correggio's peculiar mind ("peculiar," means in some degree "origi-

nal") would have caused abortion in original conception; secondly, that an original conception of a Tragic Muse, and a 'Portrait of Mrs Siddons *as* the Tragic Muse,' are not necessary to be distinguished; and thirdly, that "colour, impasto, and effect" are the best means of approaching nearest to the finest portrait in the world! Farewell, the pure and elevated thoughts and passions of art!—the intense expression, the influence divine, and lasting in the memory from youth to age!—Raphael, and Titian, Guido, Correggio, Murillo, your "occupations" are gone!

The only point of sympathy between the reviewer of Waagen's Work in the 'British and Foreign Review,' and his Reviewer in the Polytechnic, seems to be one in which they are both wrong. I allude to their preposterous estimate of the genius and paintings of West. Then, as to patronage, the latter writer tells us that West only received "from the public" 7,000*l.* "as patronage" for his historical compositions. Is any equivocation meant by the guarded expressions I have marked? "He left acres of canvass," proceeds his elegiac eulogist, "filled with religious compositions, and those of other characters, which were witnesses of the insulting neglect he experienced during his long life. We lament his fate," &c. Is it not true that West received sums "from George the Third" amounting in process of years to upwards of 30,000*l.*? I presume this may be designated "as patronage," and may account for the guarded expressions aforesaid. This is a curious sort of "insulting neglect"—a very uncommon fate among English painters for us to lament! I wish that men like Etty, Callcott, Turner, Eastlake, Hilton, Maclise, &c. could meet with a similar kind of "neglect" in private, with the addition of what similar fate they could find from the public. I do not intend, for an instant, to infer that West was overpaid for his long years of labour, but merely that he was not the instance of equally neglected and stupendous genius some half a dozen people would have us believe. Touching the genius of West, the Critic-of-critics says that if Waagen's critic in the 'British and Foreign Review' "does not do justice to West" he will cordially allow that "such is his amiable and just aim." The temporary reconciliation of the mortal foe with his enemy, on this one point of sympathy, is amusing, but nevertheless a good thing to see. He presently adds, however,—"West deserves everything Waagen's critic says of him, and very much more."

Indeed: before we can estimate the extent of this encomium it will be necessary to see what Waagen's critic does say of West, the Critic-of-critics having omitted to inform us. The critic, then, in the 'British and Foreign Review' avers that of West's pictures, of the 'Madness of Saul,' the 'Destruction of Sodom and Gomorrah,' the 'Landing of Telemachus in the Island of Calypso,' it may be said that "neither in conception nor execution could any works of a similar character be found superior." Including as this does, in the first and second pictures, the favourite class of subjects of the old masters, the eulogy is of rather a capacious kind. But this is not all. The same writer thus proceeds: "Among his finished pictures, the 'Ascension of the Saviour,' now at Petworth, is *perfect* in

colour, *equal in design to any* master, and containing a hierarchy of angels of surpassing loveliness." One would have thought this was pretty well; or at least, that it might be designated as something beyond failure in an "aim to do justice" (meaning eulogy) to West. Nor is even this, all. The same writer proceeds to speak of West's 'Death of Adonis,' which he boldly declares "in colour and drawing is worthy to be ranked with the Carracci." The 'Christ Rejected' is also said to tell the story more worthily and more completely than in any other picture by any other master, and the writer asks "Where is there as beautiful and as touching a figure of Christ? It is not to be found in the Louvre — it is not in our own Gallery—nor in the Bridgewater, nor the Grosvenor, nor the Blenheim." Come, this is pretty well, and we breathe at last. So, then, West deserves not only "all this" but "very much more!" How much more is possible? Finally, — for the same writer does really give us "some more"—it is said in the Review of Waagen, "If Mr Waagen had examined the drawings of West he would not have babbled about 'a mechanical artist.' As a designer he stands in the same class as Michael Angelo: if he never soars so high as this extraordinary man, he is never so extravagant, or so nearly bordering on caricature." Here, then, we attain the full swing of the eulogy intended by the Critic-of-critics. As West is thus placed in the same class with Michael Angelo, but without his extravagance and tendency to caricature, West of course is craftily insinuated to be the finer artist of the two; and as West is further declared to deserve "*very much more*" than all this, it follows that West is to be regarded as very much superior to Michael Angelo.

The next point that catches the eye in the article we are examining, is the astonishment displayed at the opinion of "fire being united to grace and beauty," and "delicacy being marked with decision," as exemplified in the portraits of Sir Thomas Lawrence. This very good definition of his style is declared to propose impossible combinations, and is politely designated as "foolish jargon." The illustration adduced is a consummate specimen of reasoning. "It is foolish jargon," says he, "especially in a critic, to talk of fire in grace and beauty, and energy in elegance." Now, so far from there being any impossibility in the partial union of fire with grace and beauty, or of energy with elegance, is it not palpable that the Apollo absolutely comprises *all five* of these qualities in the most harmonious and exquisite proportions?

It has been well remarked by Hazlitt, that when men quarrel and lose their tempers, they do not so much endeavour to urge the best or even the strongest arguments on their own side, as to say things the most diametrically opposed to the opinions of each other. Thus, in speaking of Turner, our Critic-of-critics says, "Turner never had an equal; he never *can* have an equal. He is a prodigy of Nature, *teaching her* continually how to adorn herself!" The astonishment of your readers, Mr Editor, must have been considerable at suddenly finding themselves in the unique presence of a writer who can thus see into futurity and determine the limits of human progress, and no less so at the announcement of eternal, infinite, and all-powerful Na-

ture receiving instructions in the picturesque from a member of the Royal Academy of London. But, in addition to the original passion for extravagant speech in this writer, the cause of the present outrageous expressions may be found in a remark of an opposite kind made by the writer in the 'British and Foreign Review,' who is a great admirer of the justly-to-be-admired Martin, and does not properly appreciate the justly-to-be-admired Turner. The latter writer makes the following remark:—"The public are now too well informed to consider a few scratches and a dab or two of colour as proofs of genius, or that Turner is a painter of history, because instead of Jessica he paints *a lady coming out of a mustard pot*." This ludicrous matter-of-fact description of a part of one of Turner's pictures, was the chief cause of the outrageous praise conferred by the opponent critic. Surely the question as to Turner is easily settled, or at least without all this violence on both sides. Turner is a man of original genius and consummate skill in peculiar parts of his art, who has the perversity to give historical names to certain wonderful, and often most beautiful effects, intended to be viewed at a proper distance,—and the public are determined to go close up to them, and call the painter ridiculous because he will not humour *their* perversity.

I have previously made some allusions to the equivocal use of the word "such," but a few more instances may still be adduced. "What painter of olden times ever produced *such* a piece of colouring and art?" So ridiculous, or so sublime, the expression may mean either. The article is full of this equally loose and extreme way of speaking. "Were there ever *such* drawings as young Reinagle produced on gray paper, heightened with the extremes of black and white chalk? No, never! by any hand which ever yet held a pencil." This may be true, whether the utmost censure or the utmost eulogy be meant,—but how can anybody possibly know the fact without having first seen all other drawings by all other hands which ever yet held a pencil? Does he intend to say that this young artist exhausted the last degrees of excellence which it was possible for human capacity to attain? It seems he does; but surely this is not proved, nor can so sweeping a position be proved, however admirable may be the large drawing bought "by old Captain Smith." Was this gentleman (one of the immense number of old Captain Smiths of the army or navy) so consummate a judge of art that the particular mention of his name should carry a weight with it? The writer, while denouncing the critic of Waagen, exclaims, "How can a man write in *such* a way?" The very same question has continually occurred to me. That a very peculiar mode of writing has been accomplished somehow, is sufficiently evident; and for this reason I have undertaken to give its writer the present brief lecture, which,—whatever he may think to the contrary,—it has nevertheless been both painful and unpleasant to administer. He evidently has a great love for the art, and it is the more to be regretted that he has chosen so ungenial a mode of combating for its lower interests.

The writer in the 'British and Foreign Review' somewhat exag-

gerates his account of the utter destructiveness of picture-cleaning, and the misdemeanors of the class which he ludicrously designates as the Skinners' Company; while his antagonist, on the other hand, seems to stand forward as a defender of the practices of the said "skinners," though he does not directly inform us of his confidence in their skill and purity of purpose. The article, however, which has been the subject of so highly-coloured an attack of words, notwithstanding some of the preposterous opinions it has put forth, contains very much information which will be serviceable to the public, to patrons of art, and also to artists. What but a strong feeling for the justice which is due to superior artists (to say nothing of the admiration and sympathy which every competent appreciator should cheerfully accord) could have dictated the following statement — a statement that ought to be made known all over the country?—

"Surely, if royalty were aware of the injuries inflicted by the irregularity in the payments their officers ought to make, the flagrant system would be put an end to. The statue of the late King George IV was ordered of Sir Francis Chantrey. The government put him to the expense of 100*l.* for parchments, and then were two years after the time agreed upon for the first payment! At one time Baily was 7,000*l.* in advance for the work for the palace, which ruined him, as he raised the money of extortioners."

"Telford, the great civil engineer who built the suspension-bridge across the Menai, has a monumental effigy sculptured of him by Baily, which is to be placed in Westminster Abbey. Baily undertook to execute the work for 1,000*l.*, the third of the sum usually charged by those who consider themselves superior to him. The Dean demanded 300*l. for the permission to place it there!*—but has since lowered it to 200*l.* That demand must be acquiesced in; and thus the whole profit of the sculptor is consumed by the extortionate demand of the grasping churchman." — *British and Foreign Review*, No. XVII. p. 47.

Here, now, would have been a better ground for the display of strong and even personal feeling on the part of the Reviewer of Reviewers, than merely fighting with all sorts of noisy violence for some petty interests and privileges of the Royal Academy as a body. The finest painters and sculptors of the country are of more consequence to the progress and true interests of the Art than all the squabbles of partisans; and the just treatment of all men of ability should never be forgotten in contests originating in difference of opinion as to what constitutes the highest excellence.

If in the course of this rejoinder it has appeared for an instant that there was a want of proper feeling towards the memories of West and Reynolds, let me at once declare my full sense of the gratitude due towards them from every lover of art in this country, and of the great respect in which their works and efforts should be held. At the same time, it is permitted to every one who is a believer in Raphael and Titian, to express his objections to unnecessary comparisons. With a sincere anxiety for the progress of art in its highest walks; with great admiration of the genius of several of the Members of the Royal Academy, and a personal regard towards some of them, I may yet venture to express the opinion that a more full and genuine inspiration is to be derived from the contemplation of the lofty and intense imaginings and artistical skill displayed by the old masters, than by the works or precepts of any of the not-the-less-estimable Presidents of the Royal Academy. R. H. H.

THE ARITHMETIC BALANCE, OR A NEW CALCULATING MACHINE; BY M. LEON LALANE, ENGINEER, &c.

When we project a road, canal, or railway, it is not sufficient to calculate by processes more or less expeditious the volumes of cuttings and embankments; the mean distance of the cutting to the embankment is an important element of the expense, which must be exactly determined. To obtain the value of this mean distance, we multiply the partial cubes of the cutting by the respective distances to which they are carried, and divide the sum of all the products thus obtained by the total cube of the cutting. But this series of operations is very long and tedious. For a route of 4 kilometres in length, for example, in which the transverse sections would be spaces averaging 40 metres, we should have 100 sections, each of which would require about 2 multiplications of numbers of from 3 to 5 figures by numbers of from 2 to 3 figures at least; moreover, all calculators know by experience that the addition of these products is very long, and subject to error.

But if we compare the formula, which is the algebraic translation of the manner in which the mean distance ought to be determined, with the relation that exists between a system of parallel forces in the same direction, which is in equilibrium about a lever to which they are applied, we shall perceive a striking analogy; for designating by p, p', p'' &c. . . . the distances from the centre of the forces P, P′, P″, &c., measured along the arm of the lever, and by δ the distance from the centre to the point where ought to be situated the concentrated force $P+P'+P''$, &c. acting upon the other arm, we shall have

$$\delta = \frac{Pp + P'p' + P''p'' \ldots\ldots}{P + P' + P'' \ldots\ldots}$$

But this relation is precisely that which serves to determine the mean distance δ of the volumes P, P′, P″ . . . . carried respectively to the distances p, p', p'' &c. . . . .

So that to determine the mean distance of transport, *without calculation*, it suffices to suspend upon one of the arms of a lever, in equilibrium about its centre, weights proportional to the volumes to be carried, at distances proportional to the distances of transport; and to find at what distance from the centre we must suspend, on the other arm, a weight equal to the sum of the weights which are on the former.

The machine which I have the honour to present to the Academy (of Sciences) is founded upon this principle. It was constructed after my plans, at the expense of the Government, by that skilful optician, M. Erust. We may represent it under the form of a common balance whose beam is not furnished with scales, but has a bread of several centimetres parallel to the axis of suspension. The two arms of the beam are divided into equal parts on each side of the centre; and one of them, in the direction of its length, into equal intervals by aid of small laminæ perpendicular to the beam, between which are to be placed the weights in the form of plates. This very simple arrangement solves the difficulty which would seem to occur in practice, of fixing a great number of weights at variable distances, and sometimes very near to one another; the total weight which is suspended at the other arm is contained in a small move-

able scale. In its actual state, the apparatus has 150 divisions on each side the axis upon a length of 30 centemetres. Each of them answers to an interval of 4 metres, so that upon the machine we may indicate distances of transport as far as 6,000 metres, a quantity which is never exceeded in the construction of an ordinary route. The scale of weights is a demi-centigramme for a cube metre. As the volume of the cutting is usually only 5 metres, and never exceeds 20 cube metres each metre in length, for an undertaking 4 kilometres long, each arm of the lever would only be charged on an average with 100, and in extreme cases with 400 grammes at most.

The machine giving the value of δ in the general formula

$$\delta = \frac{Pp + P'p' + P''p'' + \ldots\ldots}{Q + Q' + Q'' + \ldots\ldots}$$

Where the quantities P, P′, P″ . . . . p, p', p'' . . . . Q, Q′, Q″ . . . . may have the sign + or —, and have any value whatever, it may not only give us the mean distances, but may solve questions in Allegation, and such others as are implicitly comprised in the formula, as in the Rule of Three, Multiplication, Division, Involution, &c. It is also applicable to terras work, and may serve to show results in a very expeditious way. After the trials which have already been made of it, we may conjecture that the time necessary for the research of a mean distance by means of the machine, is at most but a quarter of the time required by the ordinary method. If we calculate the expense which would result from the employment of the machine for the carrying on projects of a development of routes equal to that of military routes, we should find that for 1,460 kilometres of 4 kilometres a-day, the ordinary calculation of the mean distance of transport requires two years' labour of a person at a salary of 1,000 francs at least. With 8 machines, at a cost of 80 francs each, for each of 8 departments, traversed by military routes, we should have an expense only of 500 francs in wages of the calculators, and the first outlay of 640 francs being once made, the apparatus would remain for all similar calculations.

A very simple modification would render the *arithmetic balance* adapted to calculations of a much higher order. It would suffice, in fact, to add to the graduation in equal parts that of Gunter's rule (viz. logarithmic divisions) in order to obtain the value of x in the formula.

$$\alpha^x = A^a\ B^b\ C^c \ldots\ldots$$

for thence will result the expression

$$x = \frac{a \text{ log. A} + b \text{ log. B} + c \text{ log. C} + \ldots\ldots}{\text{log. } \alpha}$$

which suits the equilibrium of a lever loaded on one of its arms with the weights a, b, c . . . . . at distances log. A, log. B, log. C, &c. from the centre, and on the other arm with the weight x at the distance log. α.

The raising to powers, the extraction of roots, double rule of three, and a number of other calculations, are only very particular cases of the preceding formula.

ILLUSTRATED PAPERS ON WOOD ENGRAVING.

No. 2.—Further History of the Art—Kirkall, J. B. Jackson, and Papillon.

Before resuming the thread of our Historical Sketch of the Rise and Progress of Wood Engraving, it may not be amiss to say a few words explanatory of the manner in which the illustrations to these papers will be published.

In the first article the cuts furnished by Mr Jackson, being facsimiles of the works of the old engravers, were improved in appearance, or rather made more perfectly like the originals by being placed in the same page with the types, and worked under a steam press. But in making selections from the more delicate and beautiful effects obtained in our own days by the engraver upon wood, it would be unjust to the artist and a disappointment to our readers if the same course were pursued; accordingly we print the specimens upon separate and superior paper, and in the best style of modern typography, that the artists may obtain every opportunity of placing their works in the fairest light, and our papers be illustrated in a style which the subject deserves. The cuts (which will be found at the end of this article) have been selected to exhibit specimens of as many artists, both French and English, as possible, as well as the various peculiarities of style of both draughtsman and engraver.

In our first paper we gave a rapid sketch of the progress of wood engraving from the earliest periods to the end of the 17th century. We did not inquire minutely whether cross-hatching was practised by the Egyptians, but contented ourselves with mentioning that Mr Jackson enumerates Babylon as a city where the art of taking an impression from a stamp cut in *relievo* was probably first practised. In his work he gives a facsimile of an impression from this primitive block, copied from the original in the British Museum; and, as we are about to offer specimens of the *latest*, we may avail ourselves of Mr Jackson's kindness to give a facsimile of this *earliest* impression from what may justly be regarded as an engraving.

Thus premising, we again continue our historical sketch. It has often been asserted that the art of wood engraving was lost from the end of the 17th century to the days of Bewick, but without truth. Not only in England, but in Germany, Holland, and Italy, it was practised by a few ignoble and indifferent artists; and if to our countryman Bewick we may not award the honour of re-producing the art, he may fairly claim that of raising it from the point of extinction to one infinitely superior to any it had before occupied. Of the engravers who preceded him we may instance Edward Kirkall, who came to London about 1712, and becoming noticeable as an engraver, found a place in the 'Dunciad,' where Pope alluded to him in connexion with Mrs Eliza Haywood, for whose works he had engraved a frontispiece:—

> "See in the circle next *Eliza* placed,
> Two babes of love close clinging to her waist;
> Fair as before her works she stands confest,
> In flowers and pearls by bounteous *Kirkall* drest."

His works were of very indifferent character, and some of the earlier ones little better than those elegant appendages to the advertising columns of our country papers, which show the wondering clodpoles the wonderful effects of the nostrums of the modern mountebank—the quack doctor. Others, however, were of a superior description. He is said to have engraved some head-pieces and ornaments for Mattaire's 'Latin Classics,' brought out by Tonson and Watts in 1713; and Papillon appears to admit they deserve considerable praise. He also executed a series of cuts, wrongly supposed to be printed from metal, for Croxall's 'Æsop's Fables,' produced by the same publishers in 1722, the subjects being copied with great accuracy from engravings upon copper by S. Le Clerc, a French artist. Several of Bewick's cuts appear to have been suggested in the arrangement and composition by cuts in Croxall, and Mr Jackson gives copies of two which illustrate this fact, as also the closeness with which the French copperplates were imitated in Kirkall's English copies upon wood. In 1724 Kirkall published twelve chiaro-scuros after the Italian masters. The outlines and drapery were printed from copperplates, the sepia-coloured tints being impressed from wood blocks. One of the largest of these is after a design by Raffaelle—Æneas carrying his father on his shoulders—which had previously been printed by Ugo di Carpa, an Italian, who executed these chiaro-scuros much better than his English rival. Walpole, in his 'Catalogue of Engravers,' speaks of this "new mode of printing, composed of etching, mezzotint, and wooden stamps," mentioning Kirkall as having "performed several prints in this manner with great justice to the drawing and expression of the masters he imitated. This invention, for one may call it so, had much success, much applause, no imitators." Kirkall also executed some other blocks, as well as works on metal, which do not deserve further notice here.

A namesake of the author of the 'History of Wood Engraving'—J. B. Jackson — was the next English artist, previous to Bewick, who paid attention to this branch of engraving. He is supposed to have gained the rudiments of his art from the engraver of the cuts in Maittaire's 'Latin Classics,' but not receiving encouragement in his own country, he went to Paris, where he remained some years. The works of Jackson are to be met with in several Italian works, ranging in date between 1738 and 1742. The subjects are various, though generally after pictures of the Italian masters; their merit also varies considerably. Upon his return to his own country he appears to have given up engraving for books, to take up what he doubtless found more profitable—the printing of chiaro-scuros for paper-hanging, for which he had an establishment at Battersea. In 1754 he brought out anonymously a volume in quarto upon this subject, in which his namesake, the historiographer of wood engraving, thinks the writer either ignorant of what had previously been done, or anxious to conceal his knowledge to enhance the value of the productions described in the book.

Papillon — the author of the French treatise on wood engraving — next claims our attention. He was the son of a wood engraver, who, like

most others at that period, were mainly occupied in cutting blocks for paper-hangings. Young Papillon displayed very early a bias towards the art which his father and grandfather had followed, and like many others who have attained celebrity in their respective vocations, several wonderful stories have been related of his youthful devotion to the art he had chosen to follow. During his father's life he was engaged in cutting blocks, the impressions from which it became his task to place upon the walls,—he was, in fact, a sort of artist paper-hanger; but he strove hard to perfect himself in engraving illustrations for books; and, upon his father's death, devoted himself to this branch with such assiduity as to affect his health, and partially his reason. He married the daughter of a sculptor, who, after he had determined upon writing an historical treatise upon the art, encouraged and assisted him in the labour; a task for which she was well fitted from previous education and natural capacity. His enthusiasm and industry gained for him the reputation he aspired after; he became the most celebrated engraver of his day, and executed the best specimens in the 'Recueil des Papillons'—a collection of the works of *the* Papillons—his grandfather, his father, his uncle, his brother, and himself. This collection, consisting of four large folios, he presented to the Royal Library, and he says with pride that it contained *five thousand* pieces of his own engraving, together with specimens executed by different members of his family for three generations. A work which materially assisted in bringing Papillon into the notice and patronage he tafterwards enjoyed was one projected by himself, under the title of 'Le Petit Almanach de Paris,' subsequently known as 'Le Papillon.' This first appeared rather more than a century ago, and was regarded by the critics and connoisseurs of the day as executed in the first style, the cross-hatching being particularly referred to. This success gained him full employment, and not only in France, but in Holland also, his works were esteemed before those of any other engraver. His 'Historical and Practical Treatise on Wood Engraving' was not published until 1766, thirty years after its commencement. It contains much curious and amusing information. The first volume is devoted to engraving for ordinary purposes; the other treats of chiaro-scuro. In his desire to elevate the art to which he was himself attached, he allows his imagination to run riot, and, in amusing defiance of facts and ridiculous independence of probability, claims all the eminent painters, and a number of persons of high rank, as disciples of his favourite art. The romantic incident of Count Cunio and his sister is stated as absolutely true, and Mary de Medici is mentioned as a devotee of wood engraving, because a likeness of herself is in existence bearing the inscription, "Mary Medici F. 1587; Papillon never seeming to consider, says Mr Jackson, that F is the first letter of *filia* as well as *fecit*, nor to have suspected that the cut was simply a portrait of Mary de Medici (then only fourteen years old), and not a specimen of her engraving. These are not the sole instances of his credulity; the entire work is tainted by the same morbid desire to elevate his subject, at any expense of reason or historical accuracy; but with all its faults it has still the merit of curious research, and if his positions are often untenable, the conceit is often characteristic, and always amusing." Mr Jackson has handled Papillon very roughly, and, we think, has pronounced too sweeping a condemnation of his French brother artist; but while he with justice exposes the pretended discoveries of

Papillon, he very properly points out the improvements he suggested, and the means he availed himself of to assist the graver in producing an effect. Papillon employed the plan of *lowering* the surface of the block before drawing the subject upon it, a method we shall more fully explain when speaking of the *practice* of the art. This he advanced as a "discovery" of his own, although it had evidently been employed before; but the same claim was advanced by Bewick, as we shall subsequently see. In fine, Papillon was a most enthusiastic and indefatigable cultivator of his profession; and, until the appearance of Mr Jackson's volume, the 'Traité de Gravure' was the most curious volume we had upon this interesting branch of the history of the Fine Arts.

After the death of Papillon, which occurred in 1776, no artist appeared in France who could rival his works until within twenty years of our own time. Nicholas Le Sueur approached most nearly to him, and Fournier, the only other worth notice, was rather a type-founder than an engraver. The latter wrote some pamphlets upon the subject, in which he also indulges in no mean display of self-adulation.

In England during this period, before the advent of Bewick, the art was in a very deplorable condition. Mr Jackson is only able to instance two blocks as "tolerable" in works of this date. They occur in a thin quarto, dated 1760, and the book and cuts have been mentioned by Southey, who, speaking of the Nonsense Club to which Cowper belonged, says: "At those meetings of

> 'Jest and youthful jollity,
> Sport that wrinkled care derides,
> And laughter holding both his sides,'

there can be little doubt that the two Odes to Obscurity and Oblivion originated—joint productions of Lloyd and Colman—in ridicule of Gray and Mason. They were published in a quarto pamphlet, with a vignette in the title-page of an ancient poet safely seated and playing on his harp; and at the end a tailpiece of a modern poet in huge boots flung from a mountain by his Pegasus into the sea, and losing his tie-wig in the fall." Our author gives, with the quotation, a facsimile of this caricature, which shows the low condition of the art at the period of its publication. Some blocks in the "Oxford Sausage," 1764, are evidenced as affording specimens of *lowering* by the same artist, whose name was Lister. Two others, S. Watts and G. Hodgson, are the only engravers claiming attention previous to speaking of Bewick; Watts for some portraits, and Hodgson for some cuts in Hawkins's 'History of Music,' for one of which Mr Douce says the artist received a medal from the Society of Arts. This was the the Hodgson with whom Bewick worked when in London.

ACADEMY OF ST PETERSBURG.

LENZ'S REMARKS ON CERTAIN POINTS IN THE DOCTRINE OF GALVANISM.

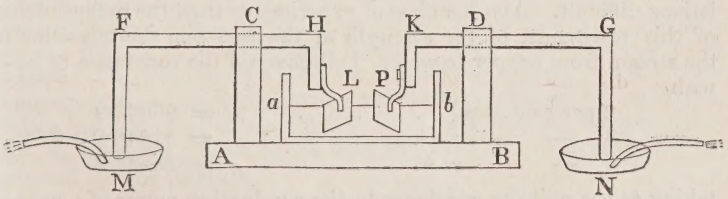
(Translated from ANNALEN DER PHYSIK, von J. C. POGGENDORFF. Leipzig, 1839.)

IT may be recorded as one of those profoundly incomprehensible facts, which in physics continually occur, that a class of phenomena, such as those of galvanism, should, during a period of forty years, have been subjected to the observations of the most subtle experimentalists, among whose names are to be found the most distinguished; and that, with respect to the particular source of such phenomena, we are even now as much in the dark as at first. Indeed after Volta abnegated, by means of his celebrated pile, the existence of the cause of these phenomena in animated organisation, and presumed them to arise from directly opposite sources, the opinions of the speculative, upon the particular seat of the so called electro-motive power of the galvanic circuit, became divided; and the earlier doctrine ascribed this power to the contact of heterogeneous conductors: while the other sought it in the chemical action of the fluids upon the solids which are in contact with them. At the present moment, the latter chemical theory of galvanism is supported by distinguished advocates; as, for instance, Faraday, De la Rive, Becquerel, &c., although again each of these, in the detail of his views, differs from the others. If, however, my own patient investigations and numerous and varied experiments have led me to embrace Volta's earlier theory, the weight of such names imposes it upon me as a duty, not to bring forward my own views until they are found to be sufficiently clear to afford definite conclusions. Hitherto, it has appeared to me to be especially necessary to be enabled accurately to ascertain the force of the stream at each instant, and on each experiment, a proposition of the practicability of which I have perfectly satisfied myself by means of the Multiplier of M. Nervander Von Helsingfors. My first endeavour was therefore to procure a similar instrument, and the most perfect of its kind, in which I have not yet succeeded for want of a proper material.

I have discovered, by means of many experiments, that all kinds of native copper act upon the magnets of other multipliers, although by chemical test I could discover no trace of the presence of iron. These experiments, as well as those of others, have convinced me that copper is slightly magnetic—or, if we follow the lately expressed opinion of Faraday—that the ordinary temperature of about 15° R. is not sufficiently high to deprive copper of its magnetism. Unwilling longer to delay my experiments, there remained to me no alternative but to choose such metal as exhibited in the least degree this counteracting power; and this I found to be brass. The apparatus constructed of this material bids fair to answer the desired end, as far as may be judged by the effect upon a simple needle. On

account of its great flexibility, I have chosen silver for the winding wire, and as soon as I shall have concluded a course of trials of this apparatus, I will commence my experiments, and shall not fail to communicate the results to the academy: and, in the meantime, I will, *in limine*, bring under consideration certain points, which although lightly held, in the estimation of the defenders of the chemical theory, at least justify us in not falling unconditionally into their views.

In the first place, I will speak of the *resistance to transition* which the galvanic stream encounters on passing from a fluid to a metal, or from a metal to a fluid. This *resistance* was first treated of by Fechner, although it had been also observed by others. As this resistance has been, in some quarters, denied to exist, I here beg permission to prove its existence, by other means than those adopted by Fechner to the same end; and I trust that my experiments will leave no doubt of its existence. For this purpose I employed the apparatus, by means of which I have, in many treatises, exhibited the influence exerted by the conducting wire on the passing stream. I raised the magnetic stream in a spiral which surrounded the cylindrical magnet, and obtained thereby a stream of a constant magnetic power, which could be estimated by the needle. But in these trials, instead of bringing the circuit into the wire, too susceptible with regard to its conducting power, this was done only with the apparatus represented by the annexed diagram, in which AB represents a board with two vertical columns, AC and BD. Through the latter the copper wires are bent, MFH and NGK, as in the figure, and the points H and K are made to approach each other at pleasure, as are also L and P, which are metal plates of an inch square screwed on this part. The latter are in a glass vessel *ab*. The ends, FM and GN, of the copper wires, dip into small mercury caps, and come out with the end of the multiplier and the spiral. By now bringing the plates L and P in contact, and passing the stream through the apparatus, we may be readily convinced that the force of the stream is equal, what metal soever we employ.



Having convinced himself of this, let the operator place the plates again at a distance from each other, say of a line; then let him pour into the vessel a conducting fluid, and compare the force of the stream raised in the spiral by the employment of plates of platina, with that produced when copper plates are substituted;

and the stream in the latter case will be found the more powerful, as the needle will indicate a bias of 47°, while in the former the result will be only 9°.

Thus, in these experiments, all the circumstances are known; the susceptibility of solid conductors, that of fluids, the removal of the plates, their surfaces, &c., &c.; and there exists between them only the distinction that the stream in one case passed from platina to a fluid, and from the latter to platina again; while in the other it passed from copper to a fluid, and thence again to copper. Hence there is only a distinction in the passage from the metal to the fluid; and as this produces a difference so sensible in the power of the stream, there must necessarily be a resistance in platina much more marked than in copper.

Similar experiments are available, in determining precisely the amount of this resistance with regard to that of the conducting fluid; or that of the solid conductors in the circuit. For this purpose it is only necessary to operate with each double plate at two distinct distances. Let these distances be d' and d'', the resistance of the solid conductor 1, that of transition λ, that of the fluid at the distance $=1 - l$, and by taking, as Fechner has done, the resistance proportionable to the distance of the plates, if a, a', and a'' represent the half of the angle of deviation of the multiplying needle, for the distance d, and for the distance d'', consequent terms for l and λ may readily be found:

$$l = \frac{2.\ \text{sin.}\ a.\ \text{cos.}\ \frac{1}{2}\ (a' + a'').\ \text{sin.}\ \frac{1}{2}\ (a' - a'')}{(d'' - d')\ \text{sin.}\ a'.\ \text{sin.}\ a''}$$

$$\lambda = \frac{\text{sin.}\ a}{\text{sin.}\ a'} - 1 - d'l.$$

I have instituted some preliminary experiments, and have found that platina, in diluted acid, offers a resistance about twenty times greater than that of copper with acid: I have, however, not yet reduced these experiments to that nicety at which I hope in time to arrive. The resistance undergoes a marked change, during immersion in the acid, and it is this circumstance which renders the calculations difficult. Another class of experiments tried the independence of this resistance, of the strength of the acid—on the transition of the stream from copper to water, I discovered the resistance to be—with

2 per cent. acid . . .	= 90093·2
4 —	= 51848·9
6 —	= 26627·2

taking as the unit the resistance to the conducting power of a copper wire of one inch long and three-quarters of a line in diameter. Although these numbers are not to be considered perfectly accurate, they leave no doubt of the proposition, that the resistances of transition bear an unlimited relation to the chemical effect of the fluids, and the metals in contact with them; a principle which coincides perfectly with Fechner's earlier researches. Thus there exists a cause which operates to the effect that the stream of a galvanic circuit

increases with the chemical effect of its elements, and the source of the generated electricity may be charged at will: thus the fact of the force of the stream being independent of the chemical action is no proof in favour of a chemical view of the excitation of electricity; as the resistance of transition, which constitutes by far the greater part of the collective resistance of the circuit, satisfactorily shows, that by employing pure water and sulphuric acid the stream is insignificant, but it becomes very powerful on the substitution of diluted acid; and the principle is unquestionably the greater chemical action, not necessarily by the increase of the electro-motive power, but by the diminution of the resistance.

This leads us to another point deserving of consideration in determining the value of both theories; and especially important in the subject of galvanic streams. I have in another place expressed myself more at length, and shown how prejudicial has been the want of due attention to the conducting powers of various metals. I may here allude to the view taken by Ohm, which describes the stream in a very simple formula:

$$F = \frac{A}{L}$$

in which F represents the force of the stream, A the amount of the collective electro-motive powers, and L the sum of the collective resistances of the conducting powers. Abundant observations and my own researches, through magneto-electric induction, prove the accuracy of this formula, while the stream passes only through solid conductors. The observations of Fechner have been equally conclusive with regard to the hydro-electric chain, although the precision may not be so striking, in consequence of the subtlety of the phenomenon. The rejection of this simple proposition has produced innumerable errors in the conclusions drawn from experiments. I may instance Becquerel's view; he, with his galvanic chain, may produce strong chemical action, but not the phenomena of heat. His apparatus is composed of acid, kali, and platina (Poggen. Ann., vol. xxxvii, p. 433). The explanation may be as follows: Let the electro-motive power, which produces the stream in Becquerel's apparatus, $= A$; leaving it undetermined where the seat of this power is to be found. The resistance which the conductors oppose to the stream consists of three individual minor resistances; that of the connecting wires ($= L$); that of the fluid ($= l$); and that of the transition ($= \lambda$) from the platina to the acid and the kali. The stream is expressed by this formula;

$$F = \frac{A}{L + l + \lambda}$$

In this L is estimated little beyond 0, in consequence of the proportionally great conducting powers of the metals: l, in like manner, is of considerably less value than λ, since between the plates and the fluid no chemical action arises. This premised, we will assume (as according to Becquerel) that instead of L another wire of n times smaller diameter is introduced into the chain, by which means this

almost infinitely small portion of the denominator becomes n times increased, which produces nothing equivalent to any diminution in the denominator, nor, consequently, in the stream; hence then the multiplier does not affect the declination of the needle. Becquerel increased the surface of the platina n times, thus diminishing n times a great portion of the denominator, as the resistance of transition bears inverse proportion to the surface; F becomes thus almost n times increased, and it follows that the evolution of gas, which is proportionable to the stream, was charged in the same relation as the immersed surfaces of the plates of platina. But that the evolution of heat in the thin platina wire was = 0, arose from the weakness of the stream: indeed in an apparatus very similar to that of Becquerel, in which the evolution of gas was considerable, the multiplier declared a diversion of only 22°, the stream not being much weakened: of this I convinced myself by the introduction of a second wire, the resistance of which was nearly equal to that of the multiplier. We have been accustomed to consider the evolution of gas as the consequence of a powerful stream, because, in making the experiment, a considerable column is necessary. But this only takes place because there is required a stream capable of overcoming a considerable resistance within the column, and the denominator increases in denoting the power of the stream, therefore F is accordingly diminished.

Another point, which has been long known but not duly considered, is the change to which metals are subjected in respect of electro-motion (be it with regard to each other in the Voltaic, or with regard to the fluid in the chemical theory) when immersed in fluid. From a series of experiments, instituted with the above-mentioned apparatus of Becquerel, I am led to believe that I have arrived at the fact, that the effect upon this modifying influence of the acid and the alkali depends upon the plates of platina, and not upon the chemical operation of the fluids. In the meantime, as the proof is not yet sufficiently satisfactory to me, I will proceed no further with the subject until the next communication, especially as this circumstance carries us far into the debate on the two views, a position which I would, if possible, avoid.

BEHIND THE SCENES.

AN ATTEMPT TO GIVE SOME INSIGHT INTO THE INTERNAL ARRANGEMENTS OF OUR THEATRES—THEIR MACHINERY, &c. &c. &c.

Most of our acquaintances profess to be learned in theatrical matters. We read, too, the lucubrations of diurnal and hebdomadal critics, who write as though they had sounded the depths of dramatic mystery; yet how very few do we find acquainted with the "working" of a theatre. Speak of a successless lessee, your friend immediately adverts to the salaries—the star system. Now it is a rule, without an exception, that *the salaries always form the smaller portion of a manager's expenses.* We hear in society persons quoting the fact of the young Roscius receiving 50*l.* per night—granted; but the nightly expenses of Covent Garden were then 250*l.*: he played three nights per week, drawing above 1,600*l.*; he received 150*l.* A season or two since the little Adelphi Theatre paid Power 96*l.* per week, and yet the salaries of performers, including him, did not amount to anything like half the expenses. On a late occasion the weekly bill of a patent theatre, for supernumeraries alone, was stated at 135*l.*

Amid the persons seldom talked of, by those who call themselves play-goers, are the printer, bill-deliverers, machinist, leader of the supers, carpenters, wing-men, fly-men, flat-men, trap-men, property-maker, property-man, tailor, wardrobe-keeper, female wardrobe-keepers, dressers male and female, armourer, librarian, musical librarian, copyists, musical copyists, call-boy, messengers, housekeeper, washerwomen, stage-cleaners, gas-fitter, gas-men, lamp-cleaners, door-keepers, fire-men, watchmen, &c. &c. &c. We say nothing of scene-painters, prompter, reader, stage and acting manager, because they are occasionally spoken of.

Whilst endeavouring to give to the general play-goer some dea of the mode of getting up pieces, and present to him a slight view of theatrical machinery, we wish also to call the attention of the scientific to a subject which has been by them wholly overlooked. The mechansts of theatres are generally practical men merely. A few words on the capabilities of various establishments will be necessary.

Drury Lane formerly held upwards of 4,000 persons, it now holds about 3,500; a greater number of individuals have, on particular occasions, paid at the doors, but they have been obliged to content themselves with peeping through the little windows of the boxes. When Kean played Jaffier and the Admirable Crichton for his benefit, nearly 900*l.* were taken, but persons were walking about the lobbies all the evening.

Covent Garden may *now* be considered as of about the same size as Drury Lane. The internal arrangements of these theatres, as regards scenery, machinery, &c. &c.. are the best we have: there is ample room for any pageant: they are lofty enough to work any-

thing from the top, and have depth or cellarage sufficient to sink any scene or scenes they please.

Let it be understood that we are far from thinking the arrangements of the patent theatres perfect; we merely represent them as being *the best we have*.

The Italian Opera House we leave out of the question, for notwithstanding the wonderful effects produced there in 'Robert the Devil' and 'Macbeth,' it is not a theatre for mechanical effects, the very construction of its stage forbidding them.

The English Opera House is, on a smaller scale, similar in its arrangements to the patent theatres.

The Haymarket is ill adapted for the purpose of a pageant, or pieces including much scenery.

Amid the minors The Victoria stands alone; there is nothing that could be done in a theatre that might not be effected there. Mr Davidge, in his evidence before the Dramatic Committee, proved that he had had on one occasion 1,230 pay to the boxes; on another, 1,090 pay to the pit; and on a third, 1,512 pay to the gallery; this gives a total of 3,832, a number far greater than the house really holds: on the *several* occasions he mentions the *other* portions, of the theatre were not nearly as full, and the overgorged gallery paid an extra sixpence and descended to the pit; the pit, on the same principle, paid its shilling and ascended to the boxes. The great box-receipt was no doubt on a benefit night, when the patrons of the performer submitted to inconvenience for his sake. Besides, the class of persons must be remembered, the gallery visitors of these theatres are principally boys, and "pack easily." The stage of the Victoria is as deep as that of Drury Lane, and it has equivalent capabilities.

It would be tedious to speak of all the minors. The Surrey has a capital stage, and, from the formation of the theatre, the auditors are near enough to be spectators also, we mean even to the minutest expression of the countenance.

The Adelphi, Queen's, and Strand were not originally built as theatres. The Adelphi was made into something like a theatre by a Mr Holland, converted into the Sans Pareil by Mr Scott—altered and re-christened Adelphi by the brothers Rodwell, and subsequently enlarged by Yates. The Queen's was the Ancient Concert Rooms, and the Strand, Burford's Panorama. They one and all present difficulties to be anticipated in buildings erected for one purpose and afterwards devoted to another; the passage behind the proscenium leading to the private boxes at the Adelphi is not four feet wide: no set scenes or frames can be worked in the first entrances, and many other inconveniences exist. The Strand is, theatrically speaking, defective in its *flies* (the wood-work beneath the roof), they not being high enough to take scenes up, but it has a cellarage of about 24 feet, and accordingly sinks what is elsewhere taken up. We might name other theatres and other instances, but merely wish to show to the reader that the failures sometimes occurring in at-

tempted effects arise less from the fault of the mechanics than the formation of the theatre.

A view of the dimensions of one or two former and present theatres may be useful as preliminary information.

When Garrick's theatre was pulled down in 1792, and a new one erected, actors were "large theatre" mad; the then new Drury had a space of 70 feet from the pannel of the front box to the green curtain: the present Drury has very nearly 10 feet less. Covent Garden is from box to curtain 63 feet. The Italian Opera 90 (the great space of stage before the curtain there must be remembered); Goodman's fields Theatre, where Garrick caught the town in 1741, was only 25 feet from curtain to box, being less by one-third than the distance from curtain to box at the little Queen's Theatre in Tottenham street.

At Drury Lane and Covent Garden the width of stage at foot-lights is about - -	50 feet
Italian Opera - - - -	60 ,,
Olympic - - - - -	32 ,,
Queen's - - - - -	22 ,,

The depth of Drury Lane stage, from the foot-lights to the back wall, is about 60 feet; that of the Surrey Theatre 53, whilst the Strand is only 20 feet!

We shall not trouble the reader much longer with statistics, but to those who doubt the decline of public patronage we extract two years' returns of the receipts at Covent Garden Theatre.

Season commencing Sept. 1810, ending June 1811 - £98,110
Season commencing Sept. 1828, ending June 1829 - 41,020

[The first gives for the season (*i. e.* 240 nights), 408*l.* 15s. nightly —the second not quite 170*l.*]

Kean, during his first season, drew on an average 600*l.* nightly; the curtain has *fallen* there last season, and this to a return of less than 30*l.*

In speaking of the internal regulations of a theatre, let us first consider security.

Fire.—The precautions taken against this calamity are of the best order. Firemen are regularly engaged on the premises: two watchmen are employed, who are bound to go over certain parts of the theatre every quarter of an hour; they must tread on particular boards, touch things, or pull lines, that connect with the "tell-tale clock," which is a circular plate, from which little points arise; the pulling and touching causes these to descend. Of course, if the watchmen have been somnolent, the points where the blanks should be are irrefragable proofs of their negligence.

Weights.—When, as in the present animal rage, elephants exhibit their ponderous proportions upon the stage, fresh boards are laid over it, and it is shored up from beneath; this precaution will not be deemed needless when it is known that Mamselle D'Jeck weighed

nearly four tons. Where things of great weight are suspended from the ceiling, or upper part of the theatre—as that which is generally termed "The Glory" in 'Midas,' on which some fourteen Gods and Goddesses ascend, the lines or wires which are attached to the car are daily inspected by the carpenter or his deputy.

Fire-arms, &c.—In minor theatres we frequently hear overloaded guns, and see things purporting to be fire-arms which are really too dangerous for use; but in well-ordered establishments these "Irish playthings" are under the control of an armourer, and performers are not permitted to load their own pieces, but receive them at the proper time, and in a proper state, from the call-boy, who obtains them of the property-man. There are some awful instances of the effect of negligence in this department: old R——, a well-known actor, who subsequently officiated as a prompter, was acting Perouse at a theatre in Ireland; when he asked for his pistols in the last scene he found the property-man had forgotten them; in this emergency the call-boy ran to the manager's house, and took a pair from the mantel-piece: without a moment's time for consideration they were used, and the actor representing Kanko shot dead upon the stage. The guiltless causer of this catastrophe lost his senses and remained insane for many months. We turn to a less afflicting anecdote. At Edinburgh, about ten years since, Mr R. Jones (an actor who acquired great celebrity in Scotland), was playing Alfred Highflyer ('Roland for an Oliver'); when he attempted to kill the macaw both barrels missed fire, and no other Manton was at hand; Murray, the manager, instantly stepped forward, expressed his deep regret, said "such things were unusual at his theatre, but that, as the gun wouldn't *go off*, it should assuredly be *discharged*." A sword with an "unbated" edge should not be taken on the stage; the rule is the same with regard to dirks, yataghans, &c. &c., but is not always observed. Taking a *bouquet* of real flowers on the stage is "fineable," accidents having occurred from persons slipping over dropped leaves.

Dress.—A rule in all theatrical regulations is that no lady or gentleman shall wear any dress but the one appointed for her or him by the stage-manager, who, of course, consults the author, tailor, &c. &c., but this excellent rule has fallen into desuetude. Stars dress as they please; leading actors do the like very generally; hence we frequently see a soubrette not only better dressed than her mistress, but wearing more jewellery than her lady's estate could purchase.

Dressing.—The dressing-rooms are appointed by the stage-manager, but circumstances arise in pieces, such as 'The Actor or Actress of all work,' where rapidity of changing is a great feature, that induce the performer to dress behind the scenes; the old plan in this case was to make a temporary square "hoard" of four scene pieces called flats, but latterly a more commodious contrivance has been introduced. Madame Vestris possesses a portable room made netirely square, hinged and girthed at the corners; it has two doors,

one to enter at as the performer leaves the stage, another to enter at from behind the scenes; these are secured internally by double bolts: in the room are a dozen pegs for dresses, hats, &c., a table, chair and glass, all of which are so hinged and bracketted as, when done with, to turn flat to the wall. This room is roofed conically, it is floored with matting, it folds up with all the contents we have enumerated like a screen, and is then but *four inches in thickness*, and can be put away amid the scenery without any danger of its receiving injury; it may be set up in one minute, and taken away in less. The specimen we speak of was invented by Mr W. Macintosh, machinist of the Olympic Theatre. The hoards we have previously spoken of had defects; it was frequently difficult to get into or out of them, and the performer was subjected to supervision from the "flies."

Machinery, Scenery, &c. &c.—It may be first necessary to explain a few technical terms.

Flats are wooden frames on which canvass is strained, to form what, under the hands of the artist, becomes a scene; they are in pairs of equal dimensions, and are pushed on by manual force so as to meet in the centre of the stage: they are worked in *grooves*, into which black lead and size has been rubbed; a good groove should be smooth as glass; the flats at the top are clenched by grooves similar in formation, but reversed in position. The upper grooves are hinged in their centre, so that the moiety extending over the stage can be raised at pleasure.* The upper part of the flats is concealed from view (masked) by cloths hanging from the roof, termed "sky-borders." The flats at Covent Garden are about 21 feet in height, so are those at Drury Lane: the Olympic nearly 18; English Opera House 19, but 17 may be taken as the average height.

Drops, or Cloths, are scenes not fixed on a frame, but attached at the top to a *baton* 1½ inch thick, and five inches wide, secured at the bottom by a roller, to which ropes are attached, by which it is rolled up and carried above the sky-borders. Rollers are not pieces of circular wood, such as masts, &c., but made circular out of thin pieces of profile wood covered with canvass: it is not always that good well-made rollers are to be seen, even in our patent theatres.

Frame Chambers partake of the nature of flats, but are in three instead of two pieces: the right and left pieces being flats, and the middle piece being let down from the "flies:" when moved away, the centre piece is taken up, and the two flats are pulled off. Where the three actions are not simultaneous, all effect is destroyed. There

* Flats frequently fail to close being propelled with unequal force and celerity from the several sides; this generates sibillatory symptoms, especially amid the Gods, whose mechanical skill detects the cause of failure. On one occasion when this occurred at the Coburg, a visitor of the upper regions called out, "*We don't expect grammar*, but you might close the scenes."

are other frame chambers which, in removal, are partially taken up, and partially sunk through the stage, but these partake of the character of

Set Pieces (rocks, castles, trees, &c. &c.)—Certain objects in nature made out in profile, which are either pulled off, taken up, or sunk, as convenience and the nature of the scene may dictate.

Wings* are profile pieces made to represent the side entrances on our stages, and are painted as trees, casements, rocks, &c.; the rule is to have wings in the grooves enough for each act ere the curtain goes up for it; their sequence is of course kept in view by the master carpenter.

Suns, Stars, &c.—In pageants, such as 'Cherry and Fair Star,' a sun or star is often seen, which, as it expands, shows some petite fairy, who, having executed her mission, re-enters her bright dwelling, and is enclosed in glory. These celestial abodes are made of profile wood cut in "*points*" or "*sweeps*," and are expanded by pulling lines; in some the points work on hinges, in others on small sloats.*

Breaking Scenes generally represent some castle or palace, which, being stormed or fired, is suddenly to fall to ruins. The *flat* is formed of boxes (representing masses of stone); these, being first covered with canvass, are well braced inside; at a given signal they are unbraced, and the fall ensues. Corinthian pillars, city gates, &c. as in the 'Siege of Rochelle' or 'Brutus,' are felled on the same principle. In pillars, the boxes are, of course, circular, and a rod from the flies to the stage pierces through the centre of each; this rod being taken up, the pillar falls in masses.

Flying.—In pieces like 'Peter Wilkins,' and in mythological dramas, the celestials are frequently represented *flying*; they are in these cases suspended by wires, the required strength of which must depend, of course, upon the weight carried. As a general rule, No. 17 realed wire is used for an adult; No. 12 for a child. The flying machinery will be best understood by the annexed diagram.

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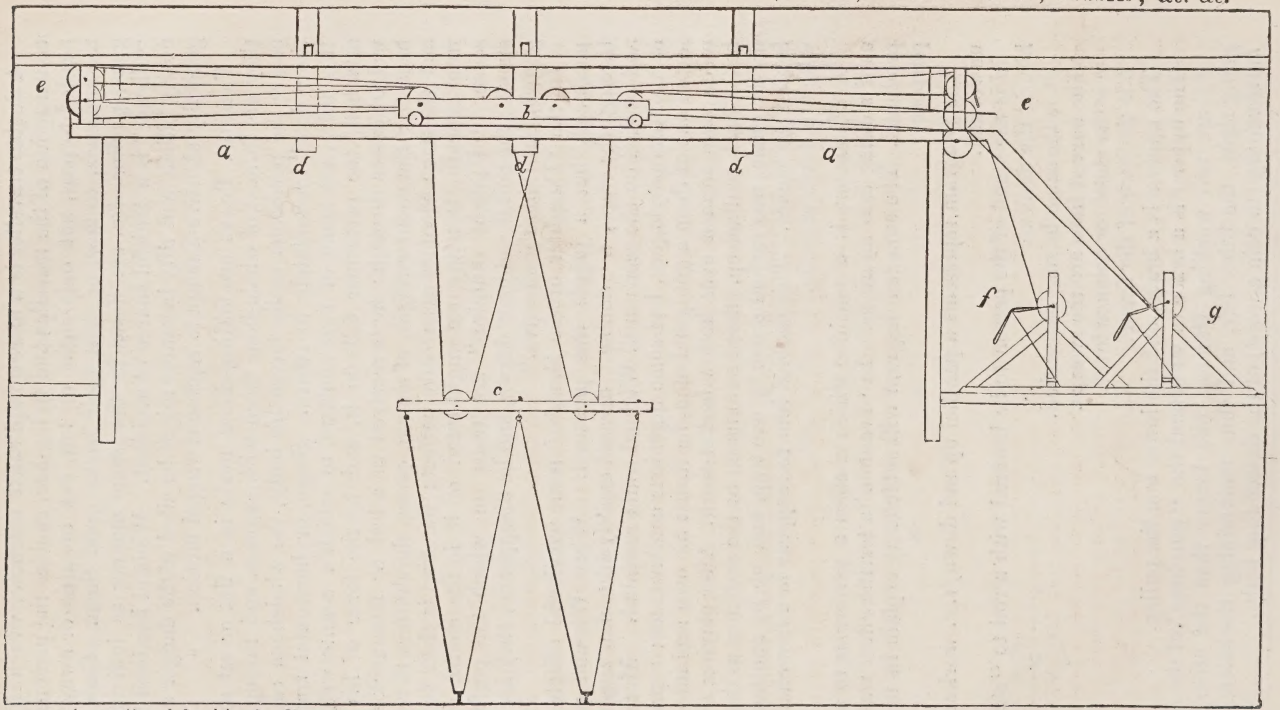
* A model was exhibited some time since of cylindrical wings, but they were generally deemed impracticable.

* In the 'Paphian Bower' (Olympic Theatre), there was exhibited a star of singular construction: it was about 18 feet in circumference; it opened centrically about 18 inches, and discovered the face of the fairy of Wych street: the star was fixed in a set-piece. Madame, when first seen, was about three feet behind this, and was carried ("*worked*") forward on a sloat, until about two feet in front of it. Inside the great star were two internal ones, working contrary ways round her face; Madame being cushioned round the head to avoid injury from the points and sweeps of which the stars were formed. A brilliant light was thrown from each side upon the whole work. the effect was magical. This was an invention of the ingenious machinist we have before alluded to.

FLYING MACHINERY: Consisting of Railroad; Traveller; Flying Bar; Wires; Attaching Hooks; Barrels; &c. &c.



e to *e* is a railroad fixed in the flies.
d d d are the supporters of the rail.
b is the traveller that passes either way from *e* to *e*.
c is the flying bar to which the lines from the traveller, and those which hook on the person or persons to be "flown," are alike attached.
f is the "take up," or "let down" barrel.
g the "take over" barrel.

A double traveller is a more complicated machine, which, by the construction of the traveller and flying-bar, enables the persons suspended to pass, not only right or left, but towards or away from the audience, to face, or turn their backs upon them. Cars, dragons, griffins, &c. are flown in the same manner as individuals. "Flying" is a fruitful source of accident. Wieland has been twice nearly killed, and fifty instances might be cited of the danger of this generally abortive attempt to represent winged motion.

Vampire Traps are folding-doors made in a flat or set scene; they are formed of whale-bone faced with canvass, and through the centre the performer easily forces his body, the whalebone causing the "door" immediately to return. Stage, or horizontal traps of this order, are made of two shutters, to which a counterweight is attached, the performer falls on it, and by the force of his own weight passes through; he is received in a bed or hammock slung beneath; the counterweight, of course, causes the shutters to return, and the stage becomes apparently perfect; the trap is then secured from beneath, lest any one might tread on it in the course of the scene. "Upright vampires" are traps on which the performer stands; the bolt is suddenly drawn, and he disappears; they are dangerous, but "highly effective."

In the 'Daughter of the Danube' some wonderful effects were produced, but a juggle was practised. When Wieland passed through the traps, a "double," dressed exactly like him, appeared, and carried on the scene until Wieland could reascend. Mathews, in his Monopolylogues, had some ingenious contrivances; representing in one of them a gouty old man, he thrust his own legs into flanneled ones formed over hollow basket-work. After playing a scene he fell back as if asleep, passed out unseen by the audience at the back of the chair, was carried down by one trap, and up by another, cut behind the scenes. This enabled him to reappear in a new character within a dozen seconds.

A Parallel is a machine which enables a performer to appear as if sinking into an abyss. In 'Ivanhoe' a terrific effect was thus produced. The annexed diagram will sufficiently explain its use and purposes.

The Diagram represents a parallel up and down, *i. e.* worked and unworked.

d is the stand of the person to be lowered with a rod to "steady" him in the descent.

*d** is the same having descended.

The curved lines are the sweeps.

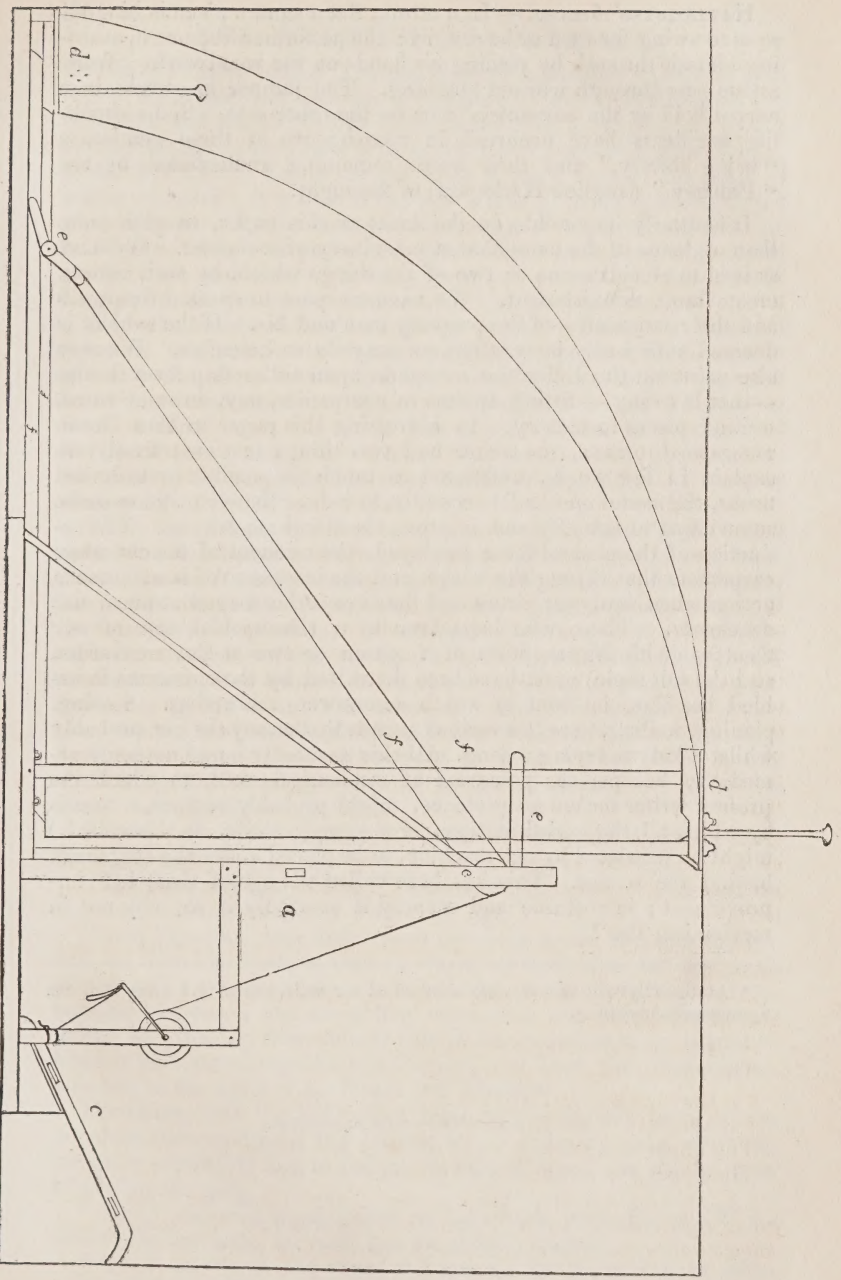
c is the check or balance lever.

b is the base of the frame.

The upper *e* is a brace, and the lower one the pulley.

The upper *f* is a brace to withstand the "purchase" of the rope.

f f are two working frames, one longer than the other; one going right, the other left, and thus maintaining the balance and *horizontality* (to coin a word) of the descending body.


p
e
f
f
f
f
e
p
e
d
c

Harlequins' Leaps. — In a strong flat a square piece is hinged, so as to swing forward or backward: the performer leaps at it, assisting himself through by placing his hands on the woodwork. Some artists pass through without touching. The jumper is caught in a carpet held by the carpenters' men on the other side. Some shocking accidents have occurred in consequence of these gentlemen "being thirsty," and their wants remaining unalleviated by the "Patchey" (anglicè Harlequin) of the night.

It is utterly impossible, in the limits of this paper, to give more than a glance at the complicated machinery of a theatre. We have striven to elucidate one or two of the things which, by their effects, create most astonishment. We have no space to speak of painters and their assistants—of the property man and his. If the subject is deemed sufficiently interesting, we may do so hereafter. We may also point out the difficulties attendant upon authorship for a theatre —that is to say — fitting dramas to companies, nay, in some cases, writing pieces to scenery. In addressing this paper to The Polytechnic Journal, the writer had two things in view; firstly, to explain in few words, unfettered as much as possible by technical terms, the *modus operandi*; secondly, to induce the scientific to make some effort to simplify and improve theatrical machinery. The reduction of the manual force employed, the removal of the countless carpenters that throng the wings, and the insurance of simultaneous action when many set pieces and flats are to be moved at once, are *desiderata*. Those who have been at a rehearsal at any of our theatres (with the exception of a season or two at Covent Garden and the Olympic) must have been distracted by the noises made behind the flat, in front of which actors were rehearsing. Sawing, planing, nailing,* are the various sounds that annoy the ear, probably whilst a lady is trying a song. All this assuredly could be easily remedied; but persons possessed of mechanical skill, to which the present writer makes no pretence, might probably suggest a means by which all the varied motions of a scene (a *strike*, as it is called,) might be regulated by one machine, to be placed under the stage, not behind the scenes. This has been called the age of theatrical improvement; in costume and scenery it assuredly is so, why not in mechanism also?

* At the Olympic screws were substituted for nails, which did away with the nuisance of hammering.

THE MOUNTED ACADEMICIAN.

THERE is ("grim reader") in the Queen's collection a picture, having for its subject the entrance of the (now) Duke of Wellington into Madrid; and to this picture there appends a brief tale, told by the painter himself, sometimes in glee, but more frequently with feelings of another tone. Ye of the art have already divined the man of whom we speak; it is indeed he, who boasts of never having painted portraits—portraits for money; who sticks to history, and will die by history, for in this pursuit his green leaves have long since fallen around him, and even while they were yet green, he knew that in England there was no countenance for historical painters.

With the Academician (for such the painter is) it was a principal object in this picture to mount the Conqueror on a horse worthy of a victor in many battles, and an animal was at length procured full of blood and mettle, a legitimate slip of the race of caliphs; in short, a horse well known to the people of the turf as one of the best that ever ran before a tail. Our Academician put him into the picture, the horse and the rider worthy of each other—a brace of winners.

While the picture was in progress one of the artist's friends called upon him, and being well mounted, proposed they should ride together. An artist rarely manages a horse well, except upon canvass; but in his simplicity of character Mr —— assented, and mounted the race-horse in question. If we remember aright the Uxbridge road was the scene of this adventure, but long before the friends had reached the end of Oxford street, the artist began to complain of the insecurity of his seat. The horse, on seeing the open road before him, snorted his pleasure aloud, and swung out his free and graceful limbs into a trot. The A.R.A. tried to give a firmer seat to his vacillating hat, in doing which he looked anxiously round, for his friend was already behind him.

"For God's sake," he cried, "come and stop this horse, or he'll break my neck!"

"Do you call that riding?" answered the other; "pull him up at once, and hold on firmly with your legs."

These, however, were feats which the artist could not accomplish, and his friend essayed in vain to come up with him, for the racer would suffer no approach, each attempt at which served only to increase his speed; and away they went, man and horse, the former toiling and fretting from side to side in his endeavours to distribute himself into something like equilibrium, and soon the Academician was lost to the sight of his friend and follower.

The latter, with the hope of at least recovering the body of the Academician, continued the pursuit at no ordinary pace, until the turnpike compelled him to reduce his rate of speed for the purpose of paying the gate.

"Have you seen a gentleman on horseback pass this way?" inquired the barrister, for such was the artist's friend.

"Yes," answered the man, "I saw his back, as I have often seen it before—what, are *you* after him? has he cheated you too?

That's the thief that's *done* me a dozen times in the fortnight; I wish he may ———"

Of the irate gate-keeper's reply the galloping lawyer heard no more than something about "thundering neck," and what seemed to him to be a running fire of the bitterest execrations ever invoked on a hapless wretch.

At every turn of the road the Academician's *fidus Achates* looked for a bleeding corpse, and pushing onward until met by a party of grooms, who were exercising their horses; of them also he inquired the fate of his friend.

"Did we see him?" cried one; "didn't we both see him and hear him?—He's gone down the road as if he was riding for the cup; he shouted to us half a mile ahead to clear the course, and went bellowing past like a Tom-a-bedlam, doing a mile a minute."

"Ay," said another, "I know that horse well; it's young Thunder, the Meteor mare's colt by Lightning, the winner of the Derby."

The barrister pushed on, addressing inquiries to those he met, all of whom had seen the flying Academician. Having passed some time in pursuit, he at length descried the artist seated on a heap of stones, and the horse tied to a gate.

"My dear ——," exclaimed the lawyer, riding up to him breathless, and with a face of much concern, "I hope you are not much hurt?"

"No, not at all," answered the Academician.

"I was much afraid, do you know ——."

"Know?—yes, I *do* know!" hastily interrupted the painter, "I know one thing, which I have learnt since I have been on that brute's back."

"What may that be?" asked Mr ——.

"It is," answered the other, "that his cursed neck is much longer than I have painted it—I must immediately go home and correct this."

In an hour after this the Academician was at his easel, and the drawing of the horse's neck was corrected; but he never ventured to mount him again. H. M.

THE INFLUENCE OF COLD ON CAPILLARY CIRCULATION.

By M. Poisseville.

In my memoir upon the causes of the motion of the blood through the capillary vessels, I have examined particularly the action of heat and cold upon capillary circulation. I observed, the temperature being 20° C, that by putting particles of ice in a receptacle, as, for instance, a bullet head, the circulation in the capillary tubes became slower and slower, the globules separated, becoming deranged in form as they sought to make way across these vessels, and they resumed their primitive form when passing through vessels of a larger calibre. By a longer stay in water at a temperature of from 1° to 2°, the circulation ceases in the greater number of capillary tubes, and if we then measure the calibre of these vessels, we find their diameters varying from 0.018 to 0.020 of a millimetre from before the ice was applied; but if we maintain this low temperature by means of a new supply of ice, at the end of a certain time

the globules of the capillary vessels in which the circulation had entirely ceased, would undergo a slight disturbance through the influence of the contractions of the heart. These oscillations of the globules acquiring a greater and greater amplitude, very soon change into a progressive motion, which becomes more and more rapid ; so that, at the end of about three quarters of an hour, the circulation is as quick in this ambient medium, which is some degrees above zero, as in the open atmosphere. Certain vessels, which, previous to the action of the ice, gave way to two or three globules in front, offer no more than one single rank of globules which move on their axis. The latter vessels, as also those of a greater calibre, appeared not to have changed their volume ; but the capillary vessels, which then produce a circulation as quick as in the normal state, have a greater diameter. The diameter of from 0.018 to 0.020 of a millimetre, when all the circulatory motion was destroyed, became 0.022 0.024, 0.026, 0.030, and 0.034 of a millimetre ; that is to say, the capillary vessels had doubled and trebled their volume. Some few other capillaries, which were quiescent, had not, as in the case of the preceding ones, augmented their calibre. If we remove the ice, the circulation is soon re-established in these latter vessels, and at the end of a few hours, all the capillaries resume their primitive volume.

Thus, under the influence of the contractions of the heart, the *living* tubes would acquire, by a prolonged action of cold, a more considerable volume.

Having preserved during the winter some bull-heads which were collected in July, I found that in January their capillary vessels were augmented in volume. The place occupied by these insects was at a temperature of two degrees above zero.

The same experiments made upon the bladder of very young mullets presented much greater difficulties. In fact, from the moment that the ice comes in contact with the capillaries of these mammiferous animals, and continues but for a few minutes, the circulation decreases, and finally is entirely destroyed. But if we replace the ice by some water at 10 or 12 degrees (the circumambient temperature being at 25° C) the circulation becomes gradually re-established, but only in those capillary vessels, which have, as in the preceding case, augmented their volume.

From the preceding facts, I cannot but conclude that the points of the tegumentary surface of the human body which are usually exposed, as that of the face, the neck, the hands, &c., and consequently submitted to a mean temperature less than that of the body itself, have their capillary vessels of a larger volume than those of other portions of the skin.

THE ANNUALS.

The shooting stars which periodically display their beautiful but evanescent fires, are surely typical of the advent of the Annuals. About the beginning of August these meteors pay us their first visit ; about the beginning of August, too, the printers commence their *annual* work. Towards the middle of November the fleeting stars "publish" in the firmament their last appearance for the current year : the middle of November is the identical period when the gentlemen of Paternoster-row, &c., complete and send forth their coruscations upon a pleased and admiring world. Other points of resemblance forcibly present themselves. The unknown nature of the shooting stars,—their flying visits,—their dazzling but short-lived brilliancy, are but so many similitudes of the sparkling Christmas presents which are now flying about in every direction.

A learned lexicographer informs us that, in the next edition of his dictionary, he intends introducing the word "Annual" as "a gilt-edged book, bound in silk of one of the prismatic colours, with elegant embellishments of gold and silver on the outside, and very

pretty engravings within." Taking this as an orthodox description, we shall first proceed to notice the publications produced under the superintendence of the Messieurs Finden, namely, their Tableaux and Oriental Annual.

The first takes the lead. It is not only the most beautiful work of the present year, but it is more beautiful than any which have preceded it in years past, even from their own establishment. There are twelve very highly-finished engravings, with upwards of one hundred embellishments superadded, in the form of an arabesque frame-work round each picture. These "embellishments" have evidently proceeded from the pencil of an artist to whom nature has granted vivid powers of imagination. They are intended to represent the details of a story, the principal personages of which constitute the picture they surround. Thus, in the one called *The Beacon*, in other words, the Somnambulist, the story of the fears to which her lover is constantly exposed by the involuntary propensity of the sleep-walker, is told in a progression of most elegant etchings, each of which represents some scene or event narrated in the descriptive tale accompanying it. The pair are first discovered in a trellised arbour; subsequently, the somnambulist appears at the window of a cottage, underneath which her lover tremblingly watches for her safety; other scenes of doubt and danger follow, until, finally, the sleep-walker is discovered on the summit of a precipitous crag, at the foot of which the constant lover is in fearful expectation of impending annihilation, the interest of the scene being increased by groups of villagers on land and in boats attending him. The centre picture, which these etchings illustrate and adorn, represents the sleeping girl crossing a draw-bridge with a lighted lamp in her hand: a more lovely picture we never saw. But it is hardly fair to praise this one at the expense of the others. The whole of the twelve are equally well executed, and equally beautiful; and what appears to us somewhat wonderful, is, that the artist who executed the etchings never makes any copy from himself, nor introduces a pictorial idea a second time, thus giving proof of extraordinary fertility of a most fanciful imagination. On the whole, *Finden's Tableaux* is a most delightful Annual. The etchings are more than worth all the price charged for the book. We have had no time to read the literary matter of either this or any of the other Annuals, which must form our apology for not alluding to it at present. The work has been got up in the first style of embellishment, and every attraction which the book-binder could employ in the worthily clothing so many exquisite and novel gems of art, has been brought into requisition.

The Oriental next claims our particular attention. This handsome volume, which contains eighteen engravings of the gorgeous architecture and scenery which the East alone exhibits, will be more than usually prized by reason of its presenting an admirably executed portrait of *Akbur Shah*, second emperor of Delhi, from a beautiful and highly finished drawing by "Alum," his majesty's portrait-painter extraordinary. In the production of this attractive Annual, Mr Bacon, the Editor, has been assisted by Captain Meadows

Taylor, from whose pen and portfolio some valuable notes upon parts of India into which Europeans seldom travel, and some beautiful sketches of these comparatively unknown regions have been obtained. The execution of the engravings in the 'Oriental' merits every praise which merit may claim and judgment bestow. The one representing the 'Shrine of Raiman Shah Doola Elichpoor,' particularly deserves mention for its surpassing grandeur; presenting, as it does, a rare combination of landscape, architecture, water, boats, and human figures, in one magnificent whole. The care bestowed upon the engravings, together with their exquisite finish and novelty of subject, render the 'Oriental Annual' worthy of a place in every library selected by the hand of taste The 'Oriental' is the most appropriately bound of all the annuals. Its covers represent elephants and boa constrictors in embossing and gold.

In addition to the two preceding works of the Messieurs Finden, we have lastly to notice the *fourth* part of their *Royal Gallery of British Art*, now on the eve of publication. The selection contains 'The Battle of Trafalgar,' painted by C. Stanfield, R.A., in the possession of the United Service Club; 'Sheep-washing,' by Sir David Wilkie, R.A., in the collection of Sir Thomas Baring, Bart.; and 'The Procession to the Christening,' painted by P. Williams, in the possession of Sir J. J. Guest, Bart., M.P. "The Royal Gallery of British Art" may justly lay claim to the title of a *national work*. It has been truly said, that "the beautiful productions of the arts of painting and engraving which decorate our annual publications, cannot, as small book plates, render justice to the expression which the painter has given to his subject; nor can they convey to foreigners a just estimate of the talent which produced them: by these works our artists are raised no higher in their opinion than as skilful illustrators of books." But, in the Gallery of British Art, an opportunity is afforded to historical and landscape engravers of preserving the expression and refinement of the originals, by the finest line manner of engraving upon a scale commensurate with their importance; at a price, too, which will put the work within the reach of those who, with limited incomes, have, from nature or acquirements, a taste for such productions.

If we are rightly informed, the 'Sheep-washing,' by Wilkie, is the only landscape scene ever painted by that gifted artist. In this picture he has made the subject thoroughly his own, by giving, with fidelity and vigour, a truly English view, finely painted and admirably chosen. It represents a busy scene occurring in the backwater of a stream below a village mill, and its charm lies in the combination of the scene with the bustle and animation of the subject. We are told that the face of every sheep is a portrait, and we can readily believe it; for it is in the picture as in nature, no two faces are alike; and however much an artist may draw upon his invention, we very much doubt his capacity to vary features as nature has done. A boy, with a sheep dog, standing in a lane, and overlooking the proceedings of the sheep-washers, will instantly remind every one of the artist's peculiar power of delineating nature as she is.

Stanfield's 'Battle of Trafalgar' is one of the finest naval pictures ever painted. The subject required all the skill and knowledge of the artist as to how it should be treated; but the judgment with which he has depicted the scene is excellent; the wrecks of the action; the boats in communication with different ships, or struggling to aid those who had clung to the masts and spars which had fallen overboard; the splashing of the shot on the water, and the long heavy swell of the sea; the pitching and rolling motion of the ships, as far as it is possible to give the appearance of motion; all these, with the situation and condition of the fleets, represent, with the truth of history, the resemblance of an action which stands out amidst a thousand victories, the most glorious in its accomplishment and consequences in the annals of the world.

'The Procession to the Christening,' is a scene at L'Ariccia, near Rome. The young mother, leaning on the arm of her own mother, is preceded by two children, bearing a wax candle and a censor. Before these are the father and grandfather of the child, and a younger sister and female relations follow in the train. Beyond this group, some of the inhabitants are regarding the procession with interest. This is a scene with which an artist in pursuit of Italian picturesque would not fail to be struck. It forms, in truth, a most beautiful subject.

The engravers of these three pictures are, Finden, W. Miller, and Stocks, in the order in which the pictures themselves are mentioned. These names are a sufficient guarantee for the perfection of line engraving, in which style the whole of them have been most carefully executed. The work improves at every step. No doubt need be felt by the enterprizing proprietors of a very extended sale amply rewarding their liberal and spirited exertions.

We now proceed to the publications produced under the superintendence of Mr Heath. These are the 'Picturesque,' the 'Keepsake,' the 'Book of Beauty,' and 'Gems of Beauty.' The plan of the 'Picturesque' is one to which we can extend unqualified approbation. It is confined to an 'Account of Windsor Castle and its Environs,' by Mr Leitch Ritchie, a gentleman whose literary acquirements eminently fitted him for the task. If most of the Annuals were to be produced upon the plan adopted in the case of the 'Picturesque,' namely, to give a description of but one remarkable place, the description being moreover, as in the present instance, a *good* one, they would lose their somewhat evanescent character, and become text books for succeeding generations. The engravings in the 'Picturesque' are fifteen in number, representing Windsor Castle in every point of view, and including a portrait of the Queen on horseback, with two scenes from the interior of St George's Hall and Chapel, and views from Eton and Virginia Water. The 'Keepsake' (edited by Lady Emmeline Stuart Wortley) maintains the proud eminence it at once assumed on its first appearance. The embellishments by Chalon, Leslie, Cattermole, Stephanoff, E. Corbould, Miss Sharp, and others, are absolutely so beautiful in their design and magical in their execution that we are at a loss to select any for particular mention. We cannot, however, pass over the

exquisite vignette which adorns the title page. It is a delicious little affair. The 'Book of Beauty' (edited by the all-accomplished Countess of Blessington) contains twelve splendid portraits of female beauties, after paintings by Cox, Chalon, Mrs Robertson, Bostock, Fisher, Lucas, and Holmes. 'Gems of Beauty' contains a series of twelve engravings, from designs by E. Corbould, with fanciful illustrations in verse, also by the Countess of Blessington. The subjects are 'Hawking,' 'Swinging,' 'The Maid of Narni,' 'The Earthquake,' 'The Miniatures,' 'The Brigand,' 'The Lovers,' 'Retrospection,' 'The Railer,' 'The Bower,' 'The Flatterers,' and 'The Heiress;' the whole of which are treated in the happiest style of the artist, and engraved most beautifully. We cannot, however, dismiss these attractive books with a notice cursory as the present; but as time and space unexpectedly press upon us at the present moment, we are compelled to postpone until the appearance of our number for the new year the detailed remarks we should otherwise have gladly offered here upon the multifarious attractions which Mr Heath's splendid volumes present at every turn. The same reason must plead our excuse for 'Fisher's Drawing-room Scrap-book,' a most charming and beautifully got up work, which we unhesitatingly recommend to the notice of every one desirous of making a most acceptable Christmas present, and which we will fully describe in our next; a promise which we also extend to his 'Juvenile Scrap-book' and 'Friendship's Offering,' the latter published by Messrs Smith and Elder.

We have received from Messrs Fisher and Son the following works:—

CHARACTER AND COSTUME IN TURKEY AND ITALY.

Embellished with a portrait of the late sultan, Mahmoud the Second, in his state caïque, and twenty other prints. Designed and drawn from nature by Thomas Allom, and printed in the tinted style by Hulmandel. With descriptions of the plates by Emily Reeve.

THE TURKISH EMPIRE ILLUSTRATED,

Comprising Constantinople and the Seven Churches of Asia Minor; the Bosphorus; Adrianople; Albania, the garden of Turkey; the waterfalls and passes of the Balkan Mountains; Servia; Roumelia; Mount Olympus; Brusa; the Plain of the Meander; Sardis, Ephesus, Pergamus, Thyatira, Laodicea, Philadelphia, and Smyrna. The first series, containing forty-eight highly finished engravings, from beautifully coloured drawings made expressly for the work, during a residence of several months, by Thomas Allom, Esq., Major Irton of the Rifle Brigade, and A. Hervé, Esq. With an Historical Account of Constantinople; a list of its Emperors and Sultans, from the dedication of the city to the present day (to be found in no other work), and descriptions of the plates by the Rev. Robert Walsh, L.L.D.

THE SHORES AND ISLANDS OF THE MEDITERRANEAN,

By the Rev. G. N. Wright, M. A., illustrated in a series of views from drawings on the spot by Major-General Sir Grenville T. Temple, Bart., W. L. Leitch, Esq., Lieutenant Allen, of the Royal Engineers, and Major Irton, of the Rifle Brigade.

SYRIA AND THE HOLY LAND,

By John Carne, Esq,, illustrated in a series of One Hundred and Twenty large engravings, from drawings taken during a journey made expressly for the purpose, by W. H. Bartlett, Esq.

THE MOUNTAINS OF HIMALAYA,

By Emma Roberts, illustrated in a series of thirty-eight views from original drawings by George Francis White, Esq.

Whether regarded as works of literature or art, the contents of these volumes are of too important a nature to be hastily glanced at. We unwillingly postpone a notice until next month, solely because we have not sufficient time to do them justice in the present number.

FOREIGN MISCELLANY.

Belgium.—In the old Abbey of St Hubert, in the province of Luxemburg, there has been fitted up an establishment for making wine, brandy, and vinegar exclusively from the fruit of the bilberry (vaccinium myrtillus)—a shrub hitherto not turned to any use. An experiment made last year was attended with complete success, and was followed by the production of more than sixty barrels of wine, vinegar, and brandy, acknowledged to be of good quality. General Chassenon is the promoter of this valuable branch of industry, and the inventor of the process by which the above-mentioned liquors are extracted from the bilberry. This discovery promises to be turned to good account in those northern regions in which the bilberry grows abundantly. The American and Swedish Ambassadors have written to their respective governments, pointing attention to this discovery.

The temperature of the month of October, as recorded by notes made at the Observatory at Brussels, is, in many respects, remarkable, especially in the sudden transition from heat to cold. During the night between the 10th and 11th the thermometer rose to 21° 8', and a storm, accompanied by loud claps of thunder, raged at two o'clock in the morning of the 11th. Such a meteorological phenomenon was never observed in the month of October at the Brussels Observatory. After the 12th the thermometer fell in a few days to 0° 4′ below zero, and on the morning of the 29th there was a great fall of snow. The following are the degrees of temperature according to the thermometer of the Observatory during the 29th and 30th of October:—

	AT 9 O'CLOCK A.M.	AT NOON.	AT 9 P.M.
29th	0° 0′ below zero	2° 0′	0° 2′
30th	0° 4′ id.	3° 6′	

The *minimum* of the night between the 28th and 29th was — 0°; that of the night between the 29th and 30th — 0° 4. The *maximum* of the day of the 29th was 2° 2′, and that of the 30th 4° 5′ above zero.

France.—Several eminent German historians and antiquarians are at present in Paris, where they propose passing the winter. The object of their visit is to collect from the libraries of Paris materials for some important works on which they are engaged. The individuals alluded to are M. Pertz, one of the superintendents of the Archives of the Kingdom of Hanover, and the author of several works on German antiquities; Dr G. Hartz of Fleusburg (Denmark) a Professor in the University of Kiel, and author of a great work on the ancient monuments of Germany; M. Stohr, of Fleusburg, a Professor in the University of Berlin, and well known throughout Europe by his work entitled 'The Rise and Fall of the Primitive States;' (Naturstaaden)—M. Ranke, likewise a Professor in the University of Berlin, author of a 'History of the Popes,' which has been translated into Prench; M. Voegeli, a Professor in the Gymnasium of Zurich, and one of the Editor's of 'Bullinger's Chronicle of the Reformation.' M. Pertz and M. Wartz are engaged in writing a 'Special History of the Different States of Germany;' M. Stohr is preparing a work on the 'Mythology and Archæology of Egypt;' M. M. Ranke and Voegeli are writing a 'General History of the Reformation.'

At the last sitting of the Academy of Sciences, M. Arago made mention of the magnificent Observatory recently erected at Pulkowa, in the vicinity of St Petersburgh, and gave some very interesting details relating to the scientific structure. He likewise noticed several important improvements about to be made in the Observatory of Paris. Several additional buildings are to be constructed for the purpose of affording convenient lodging places for six young astronomical students, whose task will be to observe the course of the planets night and day. A spacious amphitheatre, appropriate to public lectures, is also to be added to the establishment.

Some extremely interesting experiments relative to a new mode of proproducing gas, have lately been made at Bordeaux, by M. Livenais, in the presence of the Mayor, Mr Johnston, and of several men of science. From these experiments M. Livenais demonstrated that the decomposition, in a close vessel, of the husks of grapes or the lees of wine, produces carburated hydrogenic gas, the excellent qualities of which afford reason to believe that it will advantageously supersede the gas extracted from oil and resin. One pound of the dried husks of grapes placed in a retort, heated to incondesence, has furnished 200 litres of carborated hydrogenic gas. This gas, conducted into a tube, produces a white and brilliant light. It is entirely free from smell, and the flame may be raised to a very great height without emitting smoke. A second experiment has been made with dried lees of wine, the result of which has been equally satisfactory.

Victor Hugo has declared that he has no intention of becoming a candidate for the vacant chair of the academy.

M. Dutrochet has been engaged in making some observations on the vital heat of plants by means of his thermo-electric machine. The results of some of M. Drutrochet's observations show that every plant not only possesses a heat of its own, residing especially in the green plants; but that that heat, subject to a daily impulse, attains its *maximum* about the middle of the day, and presents its *minimum* during the night. The hour of the *maximum* varies in different plants from ten in the morning to three in the afternoon. For example, the *maximum* is in the Eglantine at ten o'clock, in the leek at eleven o'clock, and in the sun-flower (Helianthus annuus) at one o'clock.

An Italian engineer, named Zanino Volta, has conceived the gigantic project of cutting a subterraneous passage through the Grison Alps. He proposes to tunnel the mountain of Splugen, and to substitute for the present route—which is one of great commercial importance but difficult to pass—a railroad, communicating by its northern terminus with the Lake of Zurich, and by its southern with the Como railroad at Milan. As galleries have already been formed to the distance of half a league, there is no reason, in Signor

Volta's opinion, why the works should not be carried out much farther. An examination of the localities has convinced him that the granitic rocks he has to pass through, will yield with ease to the operations of the miner; besides, new methods might be employed to render this labour less toilsome. The granite which has been excavated is of so excellent a quality that it is believed it will serve for the formation of the rails. Two cantons have agreed to join with Signor Volta in this bold enterprise, and he is at this moment negotiating with them respecting the details of the execution.

Norway.—The King of Sweden and Norway has appointed a commission, which, under the presidency of the Vice-Chancellor, is to meet at Christiani, for the purpose of instituting a careful enquiry into the state of public education, and arranging (for the consideration of the government), a plan of reform, including every grade of institution from elementary schools to the Universities. The Rector Bugge, a member of the commission, has, at the expense of the public treasury, travelled over several parts of Europe, with the view of obtaining a knowledge of the different systems of public education therein established. His observations, which are said to be characterized by great shrewdness and impartiality, have been published.

The Storthing has abolished trade corporations, on the ground of their tendency to impede the progress of industry. No workman, however, is permitted to set up as a master until he shall furnish such proof of his capability as the law requires.

Russia.—The Emperor has conferred on Count Marino-Marini, keeper of the Papal library in the Vatican, the order of St Stanislas, with the ornamental insignia of the Imperial Crown. This honour has been conferred on the count as an acknowledgment of the assistance afforded by him to the Counsellor of State, Tourguéneff, during some recent researches in the Vatican Library relative to the history of Russia.

The St Petersburgh Academy of Sciences has sent its *Preparator*, M. Wosnesenski, to reside for three years on the north-west coast of America, in order to collect objects of natural history for the cabinet of the academy.

Count Suchtelen, formerly Ambassador from the Court of Russia to the King of Sweden, purchased many years ago, from M. Wagniere, who was secretary to Voltaire, various manuscripts in the handwriting of Frederick the Great, which had belonged to the philosopher of Fernay. These manuscripts Count Suchtelen has bequeathed to the Imperial Library at St Petersburgh. Among them is one of the two 'Faceties,' which the great king himself called 'Reves,' written between the years 1770 and 1777.

Germany.—The hundredth anniversary of the inauguration of the magnificent organ of the Ducal Residency Church in Altenburg, was lately solemnized. The organ was built by the celebrated maker, Eugene Casparini, and contains 3,270 pipes. A 'Hymn to Saint Cecælia,' composed for the occasion by the Prince Royal of Hanover, was executed by 320 musicians. His Royal Highness Prince George has dedicated the score of his composition to the King of Saxony.

Dr Tobias Hadicht, well known as Professor of the Oriental Languages in the University of Breslaw, died suddenly of apoplexy on the 25th of October. His edition of the 'Arabian Nights,' with some additional translations from the original language, is well known to the literary world.

Spohr is making rapid progress with his new oratorio, 'The Fall of Babylon,' and when completed it will be performed at Cassel. The composer has adapted his music to an English text, but it has been translated into German.

Madame Birch-Pfeiffer, the directress of the Zurich theatre, a lady of very considerable literary talent, some time ago wrote a play entitled 'Reubens in Madrid,' which she dedicated to the King of Bavaria. His Majesty has addressed a letter to the authoress, expressing his high admiration of the

play, which he pronounces to be "a dramatic masterpiece." The letter was accompanied by a present consisting of a magnificent set of gold ornaments.

ITALY.—Some curious antiquarian researches have been recently made at Spoleto by Signor Lamille Amici, Apostolic Delegate at that place. Having been led to believe from a passage in Suetonius that there existed on a mountain between Nurcia and Spoleto some monuments of the Vespasian family, he made an ascent of the mountain near Nurcia with the view of discovering them. Within a ruin, and precisely on the spot called to this day Vespa, Signor Amici discovered a beautiful marble staircase, composed of two flights of steps, and, on the right, an arch supported by pillasters of beautiful architecture. It is hoped that in the course of further excavations more of these curious antiquities will be found. The mother of Vespasian resided on this spot.

During the late sitting of the Scientific Congress at Pisa, a communication was received from the Sardinian government, in consequence of which it has been determined that the next meeting of the Congress shall take place in Turin. The proposition was made at the suggestion of Prince Carignan.

BOOKS.

GATHERINGS FROM GRAVE-YARDS. BY G. A. WALKER.—The public in general, but more especially his professional brethren, are under considerable obligations to Mr Walker for the publication of this work. He entered upon a painful and loathsome inquiry, and though exposed, in the course of his investigations, to many annoyances arising from the cupidity of interested individuals, or the apathy of those satisfied with the existing state of the grave-yards, because, in their blindness, they see no danger, he has displayed much ability and sound medical knowledge.

He has laid before the public such a mass of facts, proving beyond all doubt the disgusting and dangerous nuisance consequent on the crowded state of the grave-yards, and the present system of inhuming the dead, that the attention of the legislature and of the philanthropist must be directed to devise a remedy for the evil. He has not confined his inquiries to any particular or densely crowded portions of the metropolis, but he has shown that even royalty itself is endangered by the contiguity of a noisome pest-house in the vicinity of Buckingham Palace. The subject is one from which a less original and humane mind would have shrunk, and we regret that our limits do not allow us to do that justice to Mr Walker which the merit of his work demands; we would be glad to extract some portions of his valuable *brochure*, but our space forbids it. In the meantime we recommend the *Gatherings from Grave-yards* to the serious perusal of our readers, and we have no doubt they will be gratified by the interesting details of the most alarming predisposing cause of pestilence, existing at our very doors; and we sincerely trust that the public will not be slow to acknowlege the obligations they owe Mr Walker, who, we repeat, has evinced perseverance, and a calm spirit of philosophical inquiry and judgment, in the treatment of his subject.

ANALYSIS OF ONE HUNDRED VOYAGES TO AND FROM INDIA, CHINA, &c. &c. By Henry Wise. London. Norice and Co. and W. H. Allen, and Co.—We are strongly inclined to believe that this work was written and published for the express purpose of puffing and advertizing "Melville's Patent Propellers." Whatever migh be the motive, we are bound to confess that a work well executed on the plan of this Analysis was much wanted, in order to form an important element in the calculations relative to the all-important subject of the speediest and best communication with the British Indian Possessions. We cannot afford equal commendation to the execution of the present work as we can to the design. The voyages have not been properly selected nor arranged. The author commences with the voyage of the Taunton Castle

in the year 1791. Now, we protest against the voyage of this ship being taken into account for the purpose of obtaining an average. The science of navigation has been improved so much of late years, that it is evident that errors must accrue in the average from the introduction of the experience of a time so remote as 1791. It is true, that this ship performed her voyage in less than the general average of time, but this circumstance arises, we apprehend, rather from an extraordinarily fair state of the weather which seldom occurs, than as one of the ordinary data proper to form a calculation. In our humble opinion, all voyages previous to 1820 ought to have been excluded. If this had been the case, the average result would have been a nearer approximation to the true average than that assumed by the author. His average of one hundred voyages from India to England is 2754 hours; but if we take the average from 1791 to 1820 inclusive, we find it increased to 3278 miles, or 21 days' sail more than the general average; whilst the voyages from 1821 to 1834 inclusive only average 2527 hours, or less than the general average by more than nine days; and in the averages of the two periods there is a difference of no less than 30 days! Again, the average of the various voyages through the Straits from China, between the years 1792 and 1834, is twelve and a half days, whilst the average between the years 1792 and 1820 inclusive is seventeen and a half days, and between 1821 and 1834 is ten days and three-quarters, making a difference in favour of modern navigation of six days and three-quarters.

Another great fault in this author is giving tables of probable performances by the partial aid of steam, without giving the slightest data upon which he grounds his assumption. This renders them utterly useless.

We earnestly recommend some capable person to take up this matter, and, by a careful analysis of the performance of each ship during the last ten years, deduce the amount of saving which might be accomplished by the partial adoption of steam. We confess that we are at present of opinion that any gain in time would be more than counterbalanced by loss of freight and the expense of the engines.

An Essay on Arithmetical Perspective. By C. E. Bernard, C. E. John Williams, London.—If the state of professional education in this country were what it ought to be, we should without the slightest hesitation have condemned this Essay as a most absurd and ridiculous production. The very idea that an architect or surveyor should be so ignorant of the laws of perspective as to need such a publication as this, is revolting to the understanding. Alas! we are compelled to admit that this little work will prove of great service to too many of our professional men. Of the work itself we are enabled to speak highly, for it will undoubtedly serve the purposes of those to whom it is addressed.

To those of our professional readers who are well acquainted with the principles of linear perspective this work will offer no assistance; but to those who unfortunately (the more numerous class) practise the art of perspective drawing by the rule of thumb, and know nothing of the science, it will prove a valuable acquisition.

Chemistry no Mystery, or a Lecturer's Bequest. London. Darton and Harvey.—Although evidently intended for the use of very young persons, this work contains quite as much information as is requisite for any person who does not intend to make chemistry, a professional or hobby-horsical pursuit. The various information is conveyed in a clear and distinct manner, so that the dullest child can hardly fail to understand what it reads. We recommend every father to purchase this work for his children, unless they happen to be particularly stupid. It does much credit to Mr Scoffern, the author; it is very well printed, and neatly bound.

Antiquities of Chester. By J. S. Prout.—This is a work which does honour to British art. Our artists have for a long time been running all over the world in search of the picturesque, and have collected abundant specimens of architectural antiquities from every part of Europe and Asia. To this spirit of distant discovery we are indebted, certainly, for many beautiful productions of the pencil; but still the rich harvest of such subjects, which our own country affords, has been in a great measure neglected. Mr Prout, by travelling no further than Chester, has shown us what may be done in this way without going from home. He has explored, with the eye of an artist, the remains of antiquity which are found in that old and venerable city; and the twenty lithographic views, of which the elegant volume before us consists, will not yield in beauty or in interest to any similar work that has yet been given to the public.

SUPPLEMENT.

ON THE CONSTRUCTION OF WOOD PAVEMENTS.

BY COLONEL JACKSON.

About three years since I had thoughts of proposing the adoption of wooden paving for such of the streets of our metropolis as, being generally level, might admit of it. I had seen such abroad, and was fully aware of its many advantages, as well as of the manner of its construction. I had no view to emolument, and would certainly have called attention to the subject at the time I mention but for what I then considered an almost insuperable objection to this kind of pavement; viz. its extreme slipperyness in damp or frosty weather.

I find, however, that others have introduced the subject, that experiments have actually been made, that more are in progress, and that, generally, wooden pavements are exciting considerable attention; nothing however, as far as I am aware, has been published of a satisfactory nature regarding them, although I learn from an article in your Journal, that a paper on the subject was read at the British Association at Birmingham; that same article seems to imply that the paper was not a good one. Under such circumstances, some further observations on wooden pavements may not be unwelcome, the more particularly as much of what I shall offer is the translation of a memoir on the subject, by a foreign engineer of eminence; the memoir itself being, I believe, generally if not wholly unknown in this country.

General Considerations.—The deterioration of roads is due to different causes acting with different degrees of intensity, and whose effects are more or less rapid, according to the nature of the materials of which the roads are constructed, and the way in which these materials are employed. In a general point of view, however, we may attribute the deterioration to three principal causes—pressure, friction, and atmospheric influence.

Numerous and varied experiments on the effects resulting from these causes on stone pavements, on macadamized and other roads, have made known the mode of construction which should be preferred, with a view to economy and durability. They have served to determine the best way of laying down stone pavements, and of disposing the broken stones and other materials of ordinay roads,

as also the best thickness for the stone-work in all cases; whatever local differences there may be, experiment has already determined what is best to be done.

But this is not the case with wooden pavements: as regards these, the destructive influence of the causes above-mentioned has not yet been sufficiently tested, nor have any experiments sufficiently exact been made, to serve as the basis of positive rules for this kind of paving. Be this, however, as it may, I have from my own observation, and from the communications I have received from a friend, of his judicious researches on this subject, as well as from the known fact that wood is capable of greater or less resistance, according as the acting forces are parallel or perpendicular to its fibres—arrived at certain results, which, for want of more precise principles, may, to a certain extent, supply their place.

Pressure.—In wooden pavements the wood is placed with its fibres in a vertical position. On a road so constructed, therefore, the pressure is parallel to the fibres, and, when pressed in this way, wood is almost incompressible. Such a road presents on the very first day that it is opened a perfectly even surface, and equally capable on all parts of resisting pressure; there are, consequently, no puddles formed, no ruts, and the draught is much more equal than on the very best road of any other construction, on which, particularly when first opened and after every subsequent repair, the effect of pressure is particularly destructive.

On the surface of every road, be its construction what it may, there is friction, without which the friction of the axles in the wheels would suffice to make the latter slide along without turning. The limit of the effect of friction of the wheels upon the road is measured by that of the axles on the wheels (excepting the slight slipping over inclined surfaces), because the surface over which the carriage rolls opposes only as much resistance as is necessary to overcome the effort at the axles, which effort is very inconsiderable, by reason of the perfection now attained in turning the axletree arms and in the construction of the boxes; it must, nevertheless, be taken into account.

Friction.—Rubbed by iron, in a direction perpendicular to that of the fibres, wood, even of the tenderest kind, has an inconceivable power of resistance, while, where the friction is parallel to the fibres, these are easily separated, as may readily be seen on the planks laid down for wheelbarrows, and on such wooden bridges as have their planking laid down in the direction of the bridge. Hard stones, such as granite, flint, &c., are rapidly abraded, while they destroy the iron: limestones and certain sandstones are still more easily rubbed down, and are less detrimental to the iron; softer stones are still more easily crushed, and have but little or no effect in wearing the iron.

The advantage then of wooden pavements over stone, as far as

regards pressure and friction, is evident. Let us now pass on to the consideration of atmospheric influence, and see its effects on the two kinds of paving—that of stone and that of wood.

Atmospheric Influence.—On non-absorbent stones, of large size, the influence of atmospheric variation is hardly perceptible; and it is much less to this influence than to the effect of friction and pressure that the increased deterioration of macadamized and other similar roads in rainy weather is due. The mud, which on such roads always remains for a certain time at the surface, softens the natural cement by which the stones are held together, the mass then becomes less compact, and the stones, in consequence, more liable to individual derangement, and are thus subjected to increased injury from pressure and friction. The best means for preventing this disintegration of the road is, by breaking the stones as much as possible of an equal volume, according to the principle of Mr M'Adam. Absorbent stones, or such as are soft, would very soon be crushed if employed for the top dressing of a road, and hence they are never used but in cases of absolute necessity.

The effect of wet on a wooden pavement is to swell the blocks, when the joints become almost invisible, and the pavement is, in such case, less liable than in any other to the individual derangement of the parts of which it is composed; the surface remains even and compact, and the running of carriages smooth and easy.

From the well-known property of wood to swell by moisture, and to contract by dryness and this so much the more as the wood is of a softer nature, it would seem that in times of great drought the opening of the joints might be prejudicial to the solidity of the pavement, by allowing of a ricketyness among the blocks. Experience, however, has shown, that even in climates where the extremes of siccity and moisture are very great, their effects on pine and on fir blocks is so insignificant, that nothing is to be dreaded on that score. After intense heat the joints, it is true, are visible, but each block remains immovable, and the joints are so much the less opened as the blocks are thicker (perpendicularly); and in general the contraction from heat is much less than might be at first supposed, provided the blocks are of a certain thickness, not less than six inches.

In endeavouring to ascertain the reason of the very slight effect produced on wooden pavements by change of temperature, I think it may be explained thus—

The change of volume occasioned by dryness and moisture, though considerable in planks, is much less so in squared beams and blocks, owing probably to the greater density of the heart of the timber and the circular disposition of the layers, which is unfavourable to contraction and expansion, as also to the fact of wood being a bad conductor of heat. Independent of this, the blocks in a wooden pavement are in a very peculiar position as regards atmospheric influence. The bases of the prisms resting immediately upon the

soil, are separated from the atmosphere by the height of the prisms, and consequently experience but little change of temperature. The hygranetric state of the soil itself, and consequently that of the greater part of the pavement resting upon it, remains pretty uniformly the same. As for the upper surface of the pavement, its bad conductibility for caloric renders it very little affected by atmospheric variations. With regard to the effect of wet, the evenness of the pavement not allowing of water remaining for an instant upon it, unless in case of continued rain, the wood is hardly wetted beyond the immediate surface. Thus there is neither mud nor dust, which is not only very agreeable, but is of the greatest importance to the facility of traction. The water, it is true, will—at least till the joints are closed—find its way down the sides of the prisms to the soil beneath, whence it will, to a certain degree, be aspired into the blocks by capillary attraction, to prevent which, in some measure, the blocks may be tarred or slightly charred either in a strong fire or by rubbing them on a red hot iron. The blocks may be—and indeed those laid down in Oxford street, I understand, have been —subjected to Kyan's process to prevent rot. Now, not to speak of the additional expense thus incurred at the first, I would observe, that a great part of the general expense of wooden pavements is saved by the sale of the old blocks as fire-wood. I have heard that Kyanized timber is objectionable in ship-building, as affecting the health of the crew; I would therefore ask, May it not be dangerous to use Kyanized wood as fuel for domestic purposes? If so, no one would buy it to be so employed, and thus a loss would be sustained, considerably increasing the cost of keeping in repair a wooden pavement.

Be this as it may, it is evident that with regard to resistance to pressure, to friction, and to atmospheric influence, a wooden block pavement is unquestionably superior to the best roads as now made, and must greatly increase the effect of the movers employed. A horse will draw much more, or the same weight much longer, on a wooden than on any other pavement.

For want of data sufficiently exact regarding the durability of wooden pavements, a strict comparison can hardly yet be made between the expense of such a pavement and that of other roads and pavings. The expense for the *first laying down* of a given surface of the wooden pavement, with blocks of given dimensions, as compared with other kinds of roads and paving, is easily ascertained, though it will, of course, vary according as the relative cost of the materials employed, and the price of the different kinds of labour required, shall vary in different places or at different times. We of course suppose the soil in all cases already prepared for receiving any kind of pavement required to be laid down.

What the expense of keeping in repair a granite pavement or a macadamized road may be, we do not exactly know, but we presume that about 10 per cent. of the original cost is sufficient, while for

the keeping in repair of a wooden pavement, the sale for fire-wood of the blocks taken up will cover the expense; but then again, constructed as wooden pavements have hitherto been, with some exceptions, they require complete and total renewal after six years, though even here the sale of the old wood greatly diminishes the outlay.

It may be here remarked that where the funds for repairing streets or roads are collected by tolls or by daily rates, this tax, whether it be so much per horse or so much per unity of weight, though in amount the same, will in reality be less on a wooden pavement than on a macadamized or other road by about half; the efficient labour of a horse on wooden pavements to that of the same horse on a perfectly consolidated macadamized road being as 42 to 17. This proportion, which is from Mr Wood's work on railroads, was deduced by him from a comparison in which the wood was so placed as that the fibres were parallel to the direction of the friction, in which case the surface soon becomes uneven, and traction proportionally impeded; whereas, with the upright position of the fibres, in a wooden block pavement, the surface always remains even, and the traction of course always easy.

Of the different kinds of Wood for Wooden Block Pavements.—Every kind of wood, even the soft woods, such as fir and aspen, may be employed for block pavements; nevertheless, the harder the wood, and the closer the fibre, the longer the pavement will last. Thus pine is more durable than fir or aspen; white, and particularly black birch and maple, more than pine; elm, ash, and oak are still more durable than the former, in proportion to the strength of cohesion of their fibres. For the same reason the trunk of the tree and parts nearest it are better for the purpose than higher up, and these better than the branches. The engineer should therefore dispose his materials so as to place the strongest on the most frequented part of the road; this on high roads would be the middle, whereas, in populous streets, if there be any difference, it is the sides that are most frequented. It may, however, be observed, that as there are never any ruts on a wooden pavement, vehicles, as far as that circumstance is concerned, can have no motive for preferring one part of the way to another.

Thickness of the Pavement.—There is not yet a sufficiency of data to determine what is the best thickness to give to a wooden block pavement in different cases. It were, therefore, very desirable that experiments should be made on this subject; for if, on the one hand, it be advantageous, in an economical point of view, to give but little thickness to the pavement,—on the other hand, this may be detrimental to its durability, and on sudden changes of temperature the blocks would be apt to be jerked out of their places; too great a thickness, again, would occasion a waste of materials, and much additional expense in the labour of cutting the prisms.

As far as experience has hitherto gone, it would appear that seven

or eight inches are sufficient for prisms of pine, fir, and aspen, and five or six for birch, maple, elm, ash, and oak.

Of the most advantageous Form for the Prisms.—The regular hexagon is the most advantageous form which can be given to the prisms, if they are to be cut from round timber. This polyedron admits of being adapted to six other similar ones without leaving any interval between, so that a road constructed with such will present an equal resistance over its whole surface. Rectangular prisms may be easily placed in juxta-position, but if cut from round timber there will be too great a loss of wood; nevertheless the rectangular form should always be preferred when square timber may be obtained cheap, whether new or from broken-up ships, or sound beams of sufficient size obtained from the demolition of edifices, of wooden bridges, piers, &c. The octagonal form is very economical, inasmuch as it approaches much nearer than the hexagon to the nearly circular section of the tree; but the necessity of separating the octagons by small squares, adds to the expense, and may even endanger the solidity of the pavement, by reason of the great difference between the surface of the octagons and the interposed squares, the area of the latter being only about one-fifth of that of octagons of equal length of side.

Method of placing the Prisms on the Road.—The prisms, whether hexagons or octagons, by the nature of their forms, do not admit of the joints forming long lines, either in the direction of the axis of the road nor transversely, and this is a great advantage. With rectangular blocks, on the contrary, continuous lines cannot altogether be avoided; therefore, when such are used, they must be laid down upon the same principle as our stone paving, the face of one being opposed to the line of junction of the two next in contact immediately before, making the unavoidable continuous line to run transversely across the road. Perhaps there would be an advantage in placing the blocks diagonally, so that the continuous line would form an angle of 45° with the axis of the road or street.

Convenience and economy may sometimes render it advisable to use hexagons of different sizes.* In this case they cannot, of course, be indifferently mixed, for they would not fit; they must, therefore, be disposed in bands, and these bands may either run longitudinally or crossways of the street. The latter is by far the best, for although *transversely* a wood pavement should have *no slope* whatever, it is impossible to find a perfect level in a street of any length; the waters will therefore run in the direction of the slope, and as there will be a disposition to the formation of a rut where the bands join, if they run lengthways, the water would find its way into this, and hasten the effect.

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* The *depth* must in all cases be the same.

The blocks must not only be thoroughly dry when laid down, but the cylinders, from which the hexagons are cut, should be well seasoned and quite dry before they are cut into shape, as it is essential to the goodness of the pavement that the blocks when laid down be as mathematically similar as possible; whereas it is evident that, if some hexagons were cut from dry and others from wet wood, when the latter became dry they would be smaller than the former.

Profile of a Wooden Pavement.—We have said that the cross section of a wooden pavement should be perfectly horizontal; the slopes inevitable in the direction of the length are more than sufficient for carrying off immediately from the surface of such a pavement any water that may fall upon it; indeed, the object is not to make slopes, but to avoid them as much as possible, for so perfectly free is a well-constructed pavement from sand or dust of any kind, and so even is the surface, that when wet it is very slippery, and when a frost succeeds rain or a thaw, a wooden pavement is extremely dangerous to horses. Thus many parts of London could not possibly be paved with wood; for, under the most advantageous circumstances, the evenness of the surface on a sloping street would afford no hold to the horses' feet.

By those who have witnessed only the little bit of wooden pavement laid down in Oxford street, no idea of the cleanliness of this kind of paving, its freedom from mud in winter and from dust in summer, can be formed; for the spot in question is covered with both mud and dust brought from the other pavements at either end of it; but when a long street is paved in this way, it is as clean almost as the floor of a room.

Foundation and laying down of a Wooden Pavement.—Next to the perfect regularity of the blocks, the next important object in the proper construction of a wooden pavement is a solid and even foundation. Nowhere is this so perfectly attainable as in London: the immense traffic carried on through whose streets, the great weight of the vehicles and their loads, and the great attention paid to the repairs are such, that in many places the subsoil is hard as a rock, and can be broken up only by iron wedges and the hardest labour. Thus there is the finest possible foundation for wooden pavements. Yet, strange as it may seem, this becomes rather a disadvantage than otherwise from the ill-advised manner in which the labour is conducted. Before laying down the pavement the soil is sunk, not only to the depths necessary for receiving the blocks, but somewhat lower, and in so careless a way as to be quite uneven, one workman driving his pickaxe deeper than another. The whole is then artificially levelled by throwing in large uneven gravel. The consequence is, that the layer of gravel, if ever so even in the size of its stones, is thicker in one part than another, and hence the solidity of the bearing is different in different parts, and the pavement must soon become uneven: Nay, even if this were not the case, if the layer

of gravel were in all parts exactly of equal thickness, the difference in the size of the stones is a positive defect. A block resting on a large rounded stone is suspended on a point instead of bearing alike on all parts of its base; it has therefore a constant tendency to be rickety, and would be so if not closely pressed by the prisms round it. Now, what can be more ill-judged than this mode of proceeding. The way I should recommend would be this:—On no account allow the sub-soil to be broken up to the entire depth required for the prisms, but let it be a couple of inches short of this mark, and then let it be pared down with the greatest care, by spades or small one-handed picks, to the required depth, often applying the level to ascertain the correctness of the work. The additional expense of this labour, if any, would be compensated by the saving of the gravel, now no longer necessary. Such a foundation being swept would be level, and solid alike in all its parts, and a *very thin* layer of good sharp sand would be all that was necessary to form the bed for the prisms.

It may be observed that the principle cause of the mud in our streets, is perhaps the squeezing up of the mud from beneath. Now this effect will always be greater, the more uneven the lower surface of the stones, or the more wedge-shaped they are; for it is this which causes them to penetrate the soil, and force up that portion which they displace. In a wooden pavement, the even surface of the basis of the prisms prevent their sinking, and thus nothing can be forced up between the prisms, whose close contact is a still further preventive.

Were it not for the expense a planking, as is sometimes laid down abroad, previous to laying down the blocks, not only renders the pavement still more perfectly even at first, but keeps it so much longer, and effectually prevents the rising of any dirt from below. Indeed I am almost inclined to believe that the expense of flooring would be saved by the greater durability of the pavement, which after all, hardly gets worn but in proportion as it becomes uneven.

I have said that the surface of the pavement must be quite horizontal transversely; of course its slopes longitudinally will depend upon the natural slope of the ground: if the requisite care and attention be paid to the perfect levelling of the foundation, the blocks being of equal depth, very little driving will be necessary to obtain a level surface, but whatever driving be used, every row of blocks should be driven down as far as they will go, and made even with the previous row, before another row is laid down. This is essential, for if the driving be deferred till a great portion is done, either some blocks will not be driven down completely, or if so, all must, with great labour, be driven down to the level of the lowest, which it is often impossible to do, or the lower blocks must be taken up again, a somewhat difficult operation, and more sand placed below them. All this, however, is easily avoided by first securing a perfectly level foundation and driving row after row. I need not

say that the horizontality of the upper surface must often be tested by a level.

In some cases it has been thought advisable to fix the prisms one to another by pins, because some of them occasionally were forced out of their places; but this was owing to the careless manner in which the prisms were constructed, being in fact not prisms, but wedges or frustrums of pyramids of less area below than above: indeed they were fitted on the spot by the axe, a piece being taken off here and a slice let in there; now this must on no account be permitted, and no axe should be allowed but for splitting the half hexagons that are placed at the sides. A wooden pavement, however well the blocks may seem to fit at their upper surface, will never be good for anything if the sides of the prisms are not in immediate contact all the way down and all round. The plan of fixing the blocks one to another greatly increases the expense, and is altogether unnecessary if the blocks be cut, as they should be, by machinery constructed expressly for the purpose.

In some places, after the pavement is laid down, it is coated over with a hot composition, half tar and half pitch, well rubbed in at the joints, and before this is dry it is sprinkled over with as much sand as it will absorb. About a cubic fathom of sand is enough for 400 square fathoms of paving. The expense is very trifling, and perhaps where Kyanized wood is employed this may be unnecessary.

Occasional Repairs.—When it may be necessary to take up a block in order to replace it, this is best done by means of a barbed conical bolt. Whenever, after a time, any number of contiguous blocks may be observed to have sunk below the level of the rest they should immediately be taken up, and the substratum raised and well beaten before the same blocks or new ones are again laid down. But, as I have said, if the first foundation be even and solid this can hardly ever happen.

Experience proves that after two, three, or four years, according to the kind of wood employed, the surface of the prisms are disaggregated to a thickness of about one half or three quarters of an inch; this greatly increases the friction, and causes the more rapid rotting of the wood. It is therefore necessary to form a fresh surface, by paring down with an adze to the sound wood, and coating again with tar and sand, when it will be as good as new.

In conclusion, I have only to observe that the advantages of a wooden pavement are very great indeed, particularly for towns. There is no mud, no dust, and consequently a great economy in the expense of street-cleaning. The carriages roll along them without noise, an immense advantage, as all know who live in the great metropolitan thoroughfares. The comparative expense remains to be tried by experiment, but this experiment should be a fair one, and I repeat that, if wooden pavements have decided advantages

over every other kind, it is only when they are properly made. With negligence and inattention to the essentials above-stated, a wooden pavement is most inconvenient and very expensive. One, and one only disadvantage exists, and that is inherent to the nature of that kind of pavement, however well it may be constructed, and that is, its slipperyness in wet and frosty weather.

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MUCH ADO ABOUT NOTHING

ACT I.

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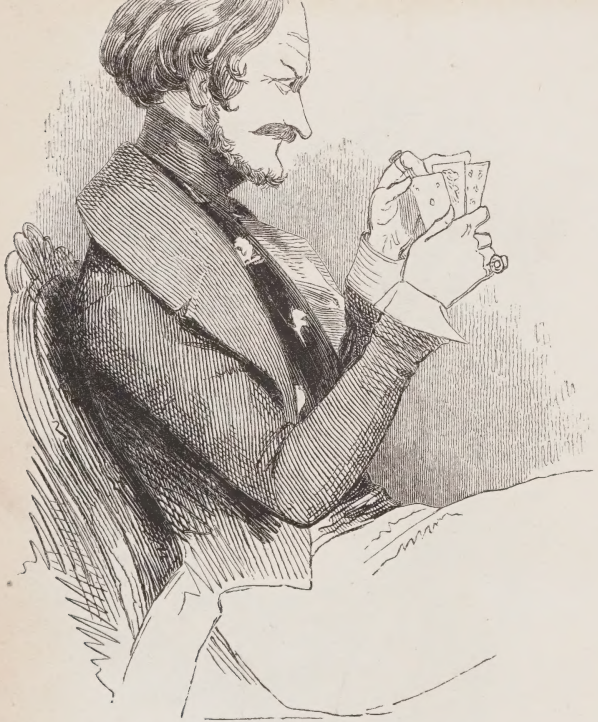

CAPTAIN ROOK.

For to have plenty, it is a pleasant thing
In my conceit; and to have it aye in hand

MR. PIGEON.

If the pigeons are small, a quarter of an hour will do them; but they will take twenty minutes, if large,

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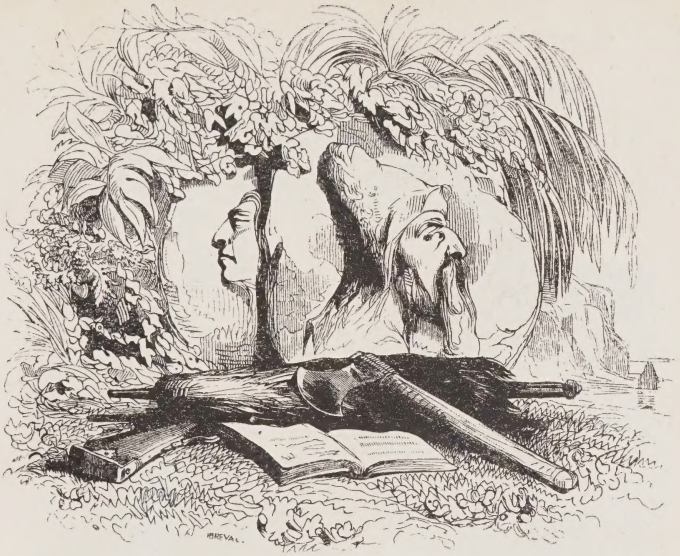

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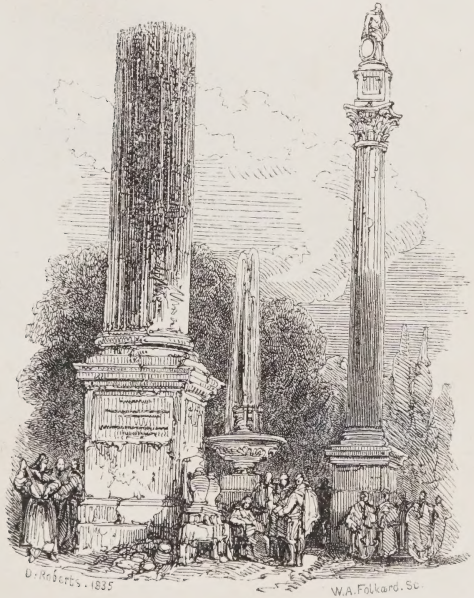
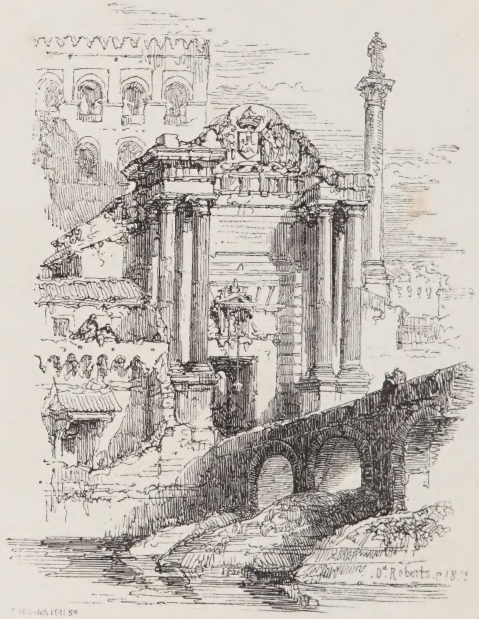


PRADO AT SEVILLE.



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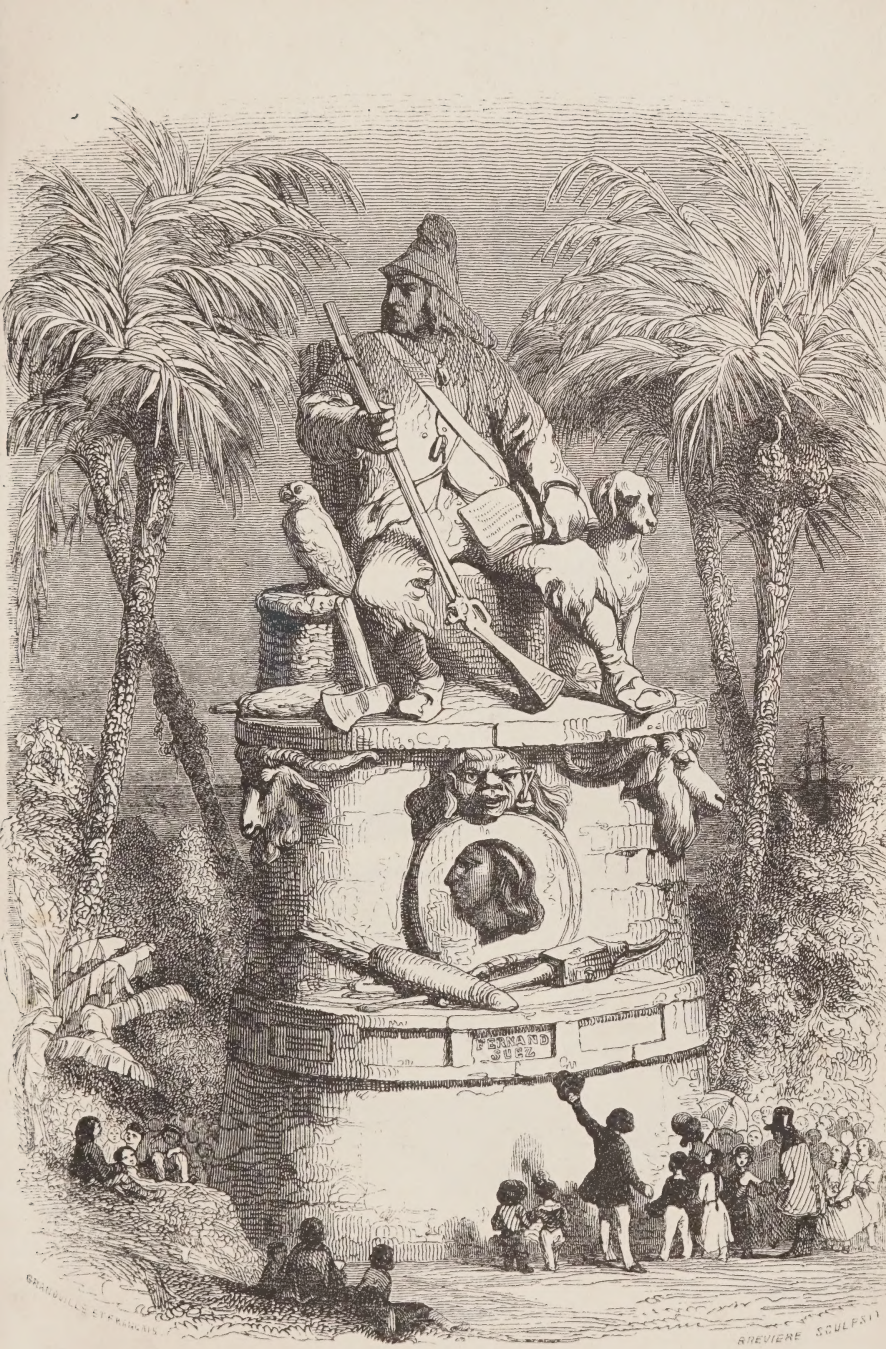

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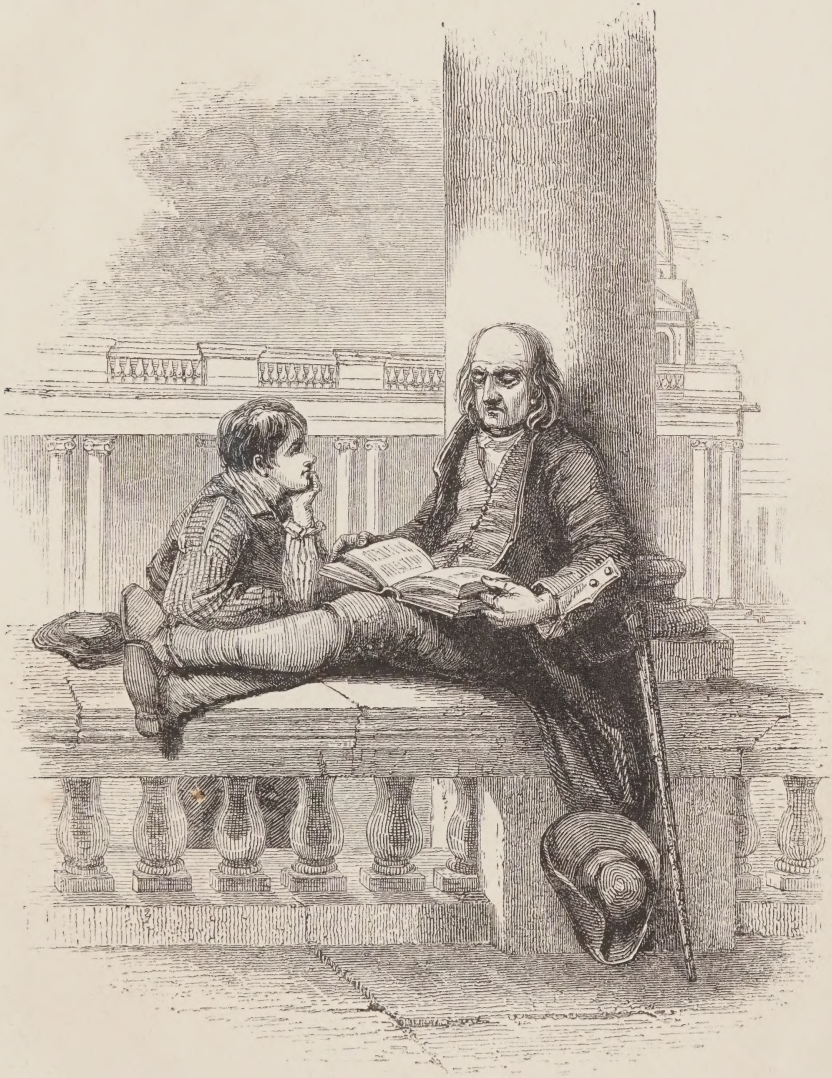

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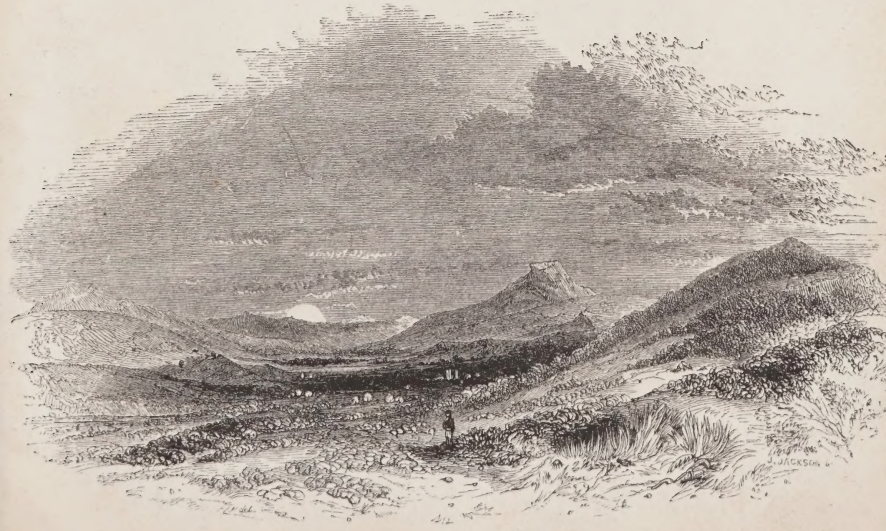

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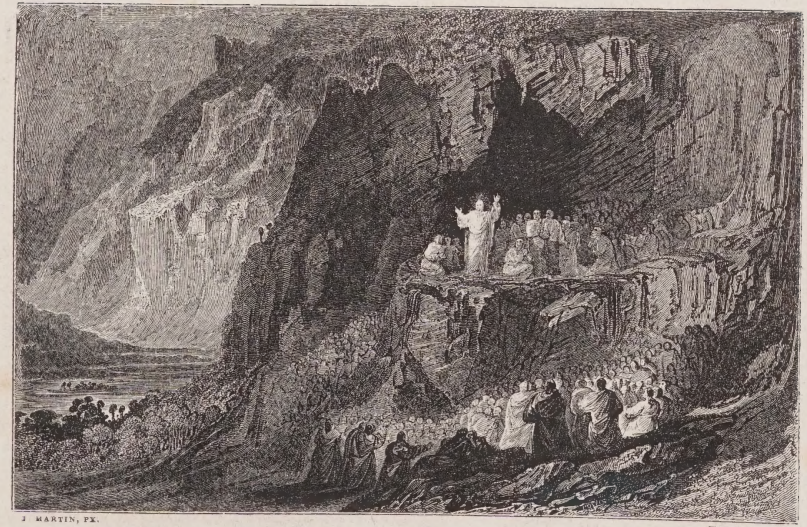

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